Final draft Translation

Summons in the Case:

Urgenda Foundation

v.

Kingdom of the Netherlands

Regarding the failure of the Dutch State to take sufficient actions to prevent dangerous climate change

(version of 25 June 2014)

Please note that the following is not a literal translation of the Dutch original summons which was filled to the District Court in The Hague on 20 November 2013. In the interest of readability moderate alterations have been made to its content. However this version reflects all the core facts and legal arguments of the Dutch original summons.

For more information about the case or this translation please contact Dennis van Berkel at:

dennis.van.berkel@urgenda.nl

+31 6 4178 6101

SUMMONS

Supreme Court of the Netherlands

Urgenda Foundation c.s. v. Kingdom of the Netherlands

On this date, the twentieth of November two thousand and thirteen,

The Plaintiffs:

Urgenda Foundation, registered at Distelweg 113, Amsterdam, The Netherlands, acting on behalf of itself as well as legal representative of all the private individuals who are listed in Annex A, which is attached to this summons and forms an integral part of it, hereafter referred to as Urgenda c.s. In these proceedings legally represented by Mr. R.H.J. Cox, lawyer at Paulussen Advocaten N.V., Sint Pieterskade 26B, Maastricht, The Netherlands.

Call on

The Defendants:

1. The Kingdom of the Netherlands, hereafter referred to as the Dutch State; and

2. The Ministry for Infrastructure and Environment.

Both defendants are established in The Hague (Article 48 Code of Civil Proceedings).

Summons is filed at the office of the Procureur-General of the Supreme Court of the Netherlands, Kazernestraat 52, The Hague, The Netherlands.

The defendant is called to appear through legal representation at a public hearing in the District Court of The Hague, at Prins Clauslaan 60, The Hague, on Wednesday 18 December 2013, at 10:00.

For the purpose of:

Responding to the claim as described hereinafter, which claim is based on the grounds as described in this summons.

Organisation of the summons and explanatory note

The summons is organised into the following chapters:

Explanatory note:

The above-mentioned chapter organisation is used for purposes of clarity and does not aim to touch upon the integral character of the summons. The summons must be interpreted as forming one inseparable body in which the different chapters are mutually reinforcing; the summons is not made of separate individual parts.

1. Introduction

1.1 Necessary background knowledge

1. The earth is heading towards sizable and far-reaching climate change that will have severe consequences for the existing ecosystem on the planet, and thus also for humanity that is dependent on these ecosystems.

2. Climate change is caused mainly by the burning of fossil fuels. In this way, humans are adding large amounts of greenhouse gases to the atmosphere and thereby changing its chemical composition.

3. Humankind burns fossil fuels to generate energy when using electricity (energy sector), powering machinery (industry), propelling means of transport (mobility), and in the heating and cooling of buildings (built environment). The burning of oil, gas and coal however not only generates energy, but also releases (as a by-product) greenhouse gases of which CO_2 (carbon dioxide) is the most important.[1]

4. Because of the increase of atmospheric greenhouse gases, the atmosphere, the land surface, the oceans and the ice masses are slowly heating. A large part of the increase in global mean surface temperature that has occurred over the past 100 years is caused by the increase of greenhouse gases in the atmosphere. Since pre-industrial times, the global average surface temperature has already increased by 0.8 degrees Celsius.

5. An increase of 0.8 degrees in average global temperature might not seem like much. However, when set against an average global temperature of 15 degrees Celsius during pre-industrial times, it becomes clear that this increase is substantial. The results of the increase in temperature are already being felt around the world. They are becoming evident for instance from the rising sea level and the melting of the arctic sea ice and of the ice caps of Greenland and Antarctica. Changing precipitation patterns, damaged ecosystems, the loss of biodiversity and the damaging impact these changes have on humanity are becoming increasingly evident.

[1] Carbon dioxide forms approximately 80% of all greenhouse gases emitted by human activities. Other important greenhouse gases are methane and nitrous oxide (laughing gas).

6. Scientists have a good understanding of the causality between the human caused (anthropogenic) emissions of greenhouse gases and the warming of the planet. To cite the Netherlands Environmental Assessment Agency: '*It has been proven beyond doubt that since the industrial revolution, the planet is warming, the land and sea ice is melting, and the sea level is rising. It is also certain that the concentration of CO_2 in the atmosphere has risen almost 40% since the start of the industrial revolution. It has also been established that humans are causing this increase in CO_2 concentration. From science, we know that greenhouse gases, which include CO_2, warm the planet. Is it now almost certain that a large part of the recent heating has been caused by human-induced greenhouse gas emissions*.'[2]

7. Approximately 55% of all emitted CO_2 is removed from the atmosphere and absorbed by the oceans and forests. Deforestation and warming oceans however might lead to a lower absorption rate. The remaining 45% of CO_2 emissions remains in the atmosphere. Unlike other greenhouse gases, CO_2 takes a very long time to break down and disappear from the atmosphere once it is emitted. During the whole of its lifespan in the atmosphere (which can be many hundreds of years), it retains its physical and chemical characteristics, including its capability to trap heat into the atmosphere. The current (40% higher) CO_2 concentration is therefore caused by all the accumulated anthropogenic CO_2 emissions that occurred since the start of the industrial revolution in 1750.

8. At the start of the industrial revolution, the atmospheric concentration of CO_2 was 280 ppm (parts per million).[3] In 2013, CO_2 concentrations reached a level of 400 ppm.[4] Based on current global emissions, it is expected that CO_2 concentrations will increase more than 20 ppm per decade. This would mean that by around 2030, the level of 450 ppm will be reached, which corresponds to an average increase in global temperature of 2 degrees Celsius. CO_2 concentrations are therefore based on a cumulative effect: new CO_2 emissions contribute further to the already increased CO_2 concentrations in the atmosphere, and consequently contribute to the increase in average global temperature.

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[2] PBL (Netherlands Environmental Assessment Agency): "De Achtergrond van het Klimaatprobleem", 14 January 2013.

[3] IPCC, WG1, H6.

[4] This means that out of 1 million atmospheric molecules, 400 are CO2.

9. In science, the causal connection between the increase in CO_2 concentrations in the atmosphere and the increase in temperature is referred to as 'climate sensitivity', broadly defined as the change in global average temperature change following a doubling of atmospheric CO_2 concentration. Based on the available scientific knowledge, climate sensitivity is approximately 3 degrees Celsius. A doubling of CO_2 concentration from 280 ppm to 560 ppm would thus result in an increase in global average temperature of 3 degrees Celsius.

10. As will be described in this summons, a CO_2 concentration level of more than 450 ppm must be avoided because the temperature increase that corresponds to higher concentration levels is considered a threat to global society. The higher the concentrations of CO_2 in the atmosphere, the higher the damage that is caused to the ecosystems and to humanity. These damaging effects are enhanced because the increase of CO_2 concentration in the atmosphere is occurring at an unnatural and unprecedented speed, which will lead to a very rapid increase in average global temperature. Moreover, high CO_2 concentrations and temperature rises increase the chances of feedback mechanisms occurring which would lead to an irreversible heating process.

11. The damage connected to climate change can be characterised as a creeping damage of which the total extent is not immediately evident, but increases gradually due to the cumulative effect of emissions. Climate change damage can be compared to the situation in which employees are constantly exposed to dangerous substances that over a longer period cause serious illnesses that slowly but consistently destroy the health of these individuals.

12. At the moment, the damaging consequences of anthropogenic CO_2 emissions might not be apparent, but these appearances are deceptive. The damage of historical and current emissions is not only creeping, but also dormant. That is to say that the damage has already been caused, but cannot immediately be felt. Dormant damage creates particular risks. Damage that is immediately apparent can be mitigated directly. Dormant damage, however, can simmer for long periods, and once it is 'discovered', it will already have inflicted irreparable damage. A good example of dormant damage is the asbestos-related disease mesothelioma, a deadly disease that

only manifests itself 30 years after being exposed to asbestos crystals. When the first victims of mesothelioma appeared, actions to prevent further exposure to asbestos were taken. However, at that time many more victims were destined to eventually become afflicted due to the exposure to asbestos in the previous 30 years. For these victims the measures that were taken came too late, and their damage (death within two years) had already become unavoidable.

13. Climate damage follows a similar path. This means that the damage to the climate is already considerably greater than can be observed now. This is the case because the reaction of the climate system to greenhouse gas emissions is delayed. It takes approximately 30 to 50 years before greenhouse gases reach their full heating potential in the atmosphere and on the earth's surface.[5] The full consequences of current emissions will therefore only be felt in 2050. Similarly, we are only now experiencing the full effect of greenhouse gas emissions that took place in 1980. The effects of emissions that occurred after 1980 will only materialise in the coming decades.

14. The delay in the climate system is important because it implies that even if humanity were to immediately cease the burning of fossil fuels, past emissions would continue to further warm the planet. Scientists agree that due to the large emissions that took place during a global economic boom, an additional heating of 0.6 degrees (on top of the 0.8 degrees increase that has already occurred) can no longer be prevented. This means that the total increase will be at least 1.4 degrees Celsius, even if all emissions of greenhouse gases are ceased immediately.

15. It is evident that a complete and immediate stop to the burning of fossil fuels is not possible. The transformation of a global society that is largely dependent on the burning of fossil fuels into a society that runs almost completely on sustainable energy will not be realised in a day, a month, a year, or even within a decade. Such a global transformation, even when carried out with great focus and concentration, will take many decades to complete. This necessarily means that during this phase of transformation, large additional quantities of fossil fuels will be burned before we arrive at a situation in which a sufficient supply of energy from sustainable sources is

[5] After these 30 the 50 years the increased heat will have an influence on the warming of the oceans and ice masses for hundreds of years.

available. These emissions will contribute to a further heating of the planet beyond the 0.8 degrees Celsius that has already been reached and the additional 0.6 degrees Celsius that is projected.

16. Society therefore experiences delays in shifting the inputs to its energy systems similar to those inherent in the climate system itself. The consequence is that the earth will warm above the level of the 1.4 degrees Celsius increase that has already become unavoidable. The extent of the additional heating will depend on the speed of the transformation to a sustainable energy supply that would allow the atmospheric CO_2 concentrations to stabilise. The proverbial bucket must not overflow, which means that the limit of 450 ppm CO_2 concentration cannot be breached. This bucket has already been well filled, up to the level of 400 ppm. However, it will depend on the emissions of the near future whether the 450 ppm limit will be breached, causing the bucket to run over. The size of future emissions will determine the nature and severity of climate change and therefore, as will be discussed below, the shape of our future as well.

17. The negative consequences of the level of climate change that is already unavoidable are sizable. It is for this reason that the United States Environmental Protection Agency (EPA) in 2009 decided to classify CO_2 as an 'air pollutant' under the Clean Air Act,[6] a decision that was unsuccessfully challenged before the United States Supreme Court by the fossil fuel industry. According to the EPA, the science of climate change shows that CO_2 and other greenhouse gases such as CH_4 (methane) are a threat to the health of current and future generations, due to the changes to the climate that they cause. According to the EPA, these health threats include decreased air quality, rising temperatures, increases in extreme weather events (storms, heat waves, droughts, forest fires and other fires, floods), the increase of infectious diseases, rising sea levels, damage and loss of ecosystems and biodiversity, risks for forestry, diminishing drinking water supplies and decreasing food production. In classifying CO_2 as an 'air pollutant' under the Clean Air Act, the EPA made reference to the effects of climate change that take place outside of the direct sphere of the United States' territory. Examples are crop failures in other areas of the world that will have an indirect effect on United States citizens due to the interrelated dependences of the

[6] Decision of 15 December 2009, Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act.

global economy. All these effects of climate change threaten the security, well-being and health of the American society. Moreover, according to the EPA, these negative effects will only worsen as time progresses.

18. The findings of the EPA are very similar to those made by the European Commission with regard to the impact of climate change on European citizens, as expressed in the 'Green Paper on Climate Adaptation' (2007) and the 'White Paper on Adapting to Climate Change: Towards a European framework for action' (2009). The EPA findings are also similar to those made by the Dutch government, which (after consulting with the Netherlands Environmental Protection Agency) adopted the findings made in the Commission's Green and White Papers. Concerning the impacts of climate change on the Netherlands, comparable findings were made for example by the Netherlands Court of Audit in its 2012 report 'Adaptation to climate change: strategy and policy'.

19. Society will therefore be forced to adopt adaptive measures to protect itself against the consequences of climate change that have already become unavoidable. Warming that goes beyond the already inevitable will however have to be avoided to prevent so-called dangerous climate change. The situation has to be prevented in which a further accumulation of CO_2 in the atmosphere leads to an increase in temperature which will cause the climate change process to accelerate to a rate in which changes that normally take millennia will occur in a matter of decades. One occurrence that would be triggered by such a fast rise in temperature is for instance the sudden melting of the permafrost, which would lead to large quantities of methane being released into the atmosphere at an unprecedented rate. This would lead to a dramatic acceleration of climate change to which both humanity and nature will not be able to adapt. Dangerous climate change would lead to great social, economic and ecological disruptions and would put in the balance the survival of a considerable part of human and animal life on the planet. The focus of the international community in the past decades has therefore been to avoid such dangerous climate change.

20. It is with this goal in mind that in 1992 more than 190 countries (including all members of the European Union) signed the United Nations Framework Convention on Climate Change (UNFCCC). In this treaty it was determined that emissions of greenhouse gases should be reduced to a level that would prevent '*dangerous*

anthropogenic interference with the climate system', that 'developed country' members to the treaty should take the lead in combating climate change and the adverse effects thereof, and that countries should base their actions on the precautionary principle even while the science is not fully settled. The members of the UNFCCC have also concluded that based on available scientific evidence, a global annual mean surface temperature increase of 2 degrees Celsius above pre-industrial levels should be considered as dangerous anthropogenic climate change. This means that atmospheric CO_2 concentrations should stay below the limit of 450 ppm. The parties to the UNFCCC have added to this conclusion that a warming of 1.5 degrees Celsius might already cross a dangerous threshold (which means the limit of CO_2 concentration is considerably lower than 450 ppm).

21. Despite numerous attempts by the parties to the UNFCCC to come to an agreement to reduce emissions to a level that would prevent a rise of average global temperature above the dangerous threshold, no such agreement has been concluded. In light of their obligation to take the lead in combating climate change, the governments of the Netherlands, the EU and the other industrialised countries have concluded that in order to have a realistic chance of not crossing the 2 degrees Celsius threshold (defined as a 50% chance), they must achieve a reduction in emissions of at least 25 to 40% compared to 1990 levels by the year 2020. Despite this conclusion, the reduction goal considered necessary for 2020 is not used as the starting point by the governments of the Netherlands and other EU member states when determining their reduction efforts. The Netherlands and other EU member states are thus knowingly failing to reduce their CO_2 emissions to the level that they themselves have concluded is necessary. This, combined with the fact that no other industrialised country is likely to reach the necessary reduction target of 25 to 40%, means that a scenario in which the global average temperature will stay under 2 degrees Celsius is quickly disappearing from sight.

22. Besides the United Nations and many other environmental and human rights organisations, the World Bank and the International Energy Agency (IEA) have also sounded the alarm bell. Following the failure to come to an international agreement and given the general absence of adequate climate policies, they direct industrialised countries to accept their individual and separate responsibilities to reduce emissions within their own borders and to adopt appropriate policies that would accomplish

these reductions. These organisations conclude, based on the available scientific evidence and the absence of concrete policies, that the global average temperature could increase to 4 or 5 degrees Celsius above pre-industrial times before the end of this century. They conclude that the consequences of such a rise in temperature would be potentially catastrophic for human civilisation, not in the least because at such temperatures 70% of all animal and plant life would be threatened with extinction. The projected increase of the global average temperature therefore puts all human, animal and plant life on this planet in grave danger.

23. Reaching the reduction goal of 25 to 40% by 2020 is of great importance because, as will be clarified later in this summons, the consequence of the 2-degree threshold is that if no additional emissions reductions are undertaken and the current emission levels are maintained, the world will already have reached the 450-ppm limit by 2030. It will therefore only be able to make use of fossil fuels for approximately 20 more years. After this point, the proverbial bucket previously mentioned will overflow and breaking the 2 degrees threshold will become inevitable. Due to the delayed effect of CO_2 emissions, this level of warming will not present itself at that time, but approximately 40 years later. In other words, based on the current rate of emissions, the world will run out of its 'carbon budget' within 20 years, after which 2 degrees of warming will become a fact. Preventing the breach of the 2-degree threshold at that point could only be obtained by an immediate switch to a completely carbon-free economy. It is evident that such a drastic and immediate transformation is not possible. To make the transition to an alternative CO_2-free energy supply, the world needs more than 20 years. This extra time can only be obtained if the world immediately starts by reducing its current emission levels as soon as possible and as quickly as possible. Only in this scenario would the world have more than 20 years before the so-called 'carbon budget' runs out. For this reason, drastic emissions reductions undertaken by all the industrialised countries are necessary before 2020 to enable the world to have a realistic chance of avoiding dangerous climate change.

24. Far-reaching emissions reductions before 2020 are therefore needed to maintain a real chance of staying below 2 degrees of warming. According to the IEA, rapid emission reductions before 2020 are also the *only* way to keep the energy transformation affordable. The IEA, which the Netherlands and many other industrialised countries are members of, calculated that CO_2 reduction measures that

are undertaken after 2020 will be up to 400% more expensive than measures taken before 2020.[7] Such a significant increase in the costs of emissions reductions, which would be the result of the unwillingness of the current generation to respond appropriately, would make the necessary transformation much more expensive or even unaffordable for the next generation, which would mean that it could no longer be achieved. Any delay in taking emission reduction measures therefore increases risk.

25. The expressed concern of climate scientists and the aforementioned international organisations is that while drastic reduction efforts before 2020 are necessary to keep the goal of staying under 2 degree global warming practically and financially attainable, there are no indications that this is what will happen.

26. For all the reasons mentioned above, the necessary emission reductions of 25 to 40% that industrialised countries should undertake before 2020 will almost certainly not be reached. This is not in the least because the Netherlands and the EU are not setting these goals for themselves. The EU has set itself a target of only 20% emissions reduction by 2020, and the Dutch target, which through EU regulation is connected to the EU target, is set at only 16% reduction before 2020 (note: because of the strong link between EU climate policy and Dutch climate policy, this summons regularly refers to EU policy as well as Dutch policy).

27. Because the Netherlands and the EU have not set the minimum reduction target of 25% and are therefore not taking the minimum required measures to prevent dangerous climate change, they subject society to the potential catastrophic consequences of dangerous climate change. At the least, they are contributing to the possibility of dangerous climate change becoming a reality. This automatically raises legal questions that, due to the severity of the situation and the size of the potential damage, demand an answer. As will be set out in this summons, this is all the more the case because the Netherlands and the EU (i) are fully aware of and have officially acknowledged the nature, seriousness and timing of this issue, (ii) have themselves stated in the context of international negotiations that industrial countries will have to realise emission reductions of 25 to 40% by 2020 to maintain a real (50%) chance to

[7] IEA, World Energy Outlook 2011, pp. 40 and 235 (see Exhibit 9 of this summons).

avoid dangerous climate change, and (iii) have stated that these reduction goals are both technically and economically feasible.

28. The necessary emission reduction norm of 25 to 40% below pre-industrial times by 2020 has been determined by the signatories to the UNFCCC and therefore defines which actions are necessary to fulfil the duty of care of these member states. However, without giving any explanation or justification, the Netherlands and the EU have chosen to ignore the 25 to 40% emissions norm when formulating their climate policies. By violating this norm, the Dutch State is violating international law, committing an unlawful act and contributing to the endangerment of the citizens of the Netherlands, the EU and the globe. This leads to the violation of human rights, including the right to life, the right to good health and the right to respect for private and family life.

29. The relationship between climate change and the worldwide violation of human rights has been explicitly recognised by the UN Human Rights Council in Resolution 10/4 from 2009 which states:

'Noting that climate change related impacts have a range of implications, both direct and indirect, for the effective enjoyment of human rights including, inter alia, the right to life, the right to adequate food, the right to the highest attainable standard of health, the right to self-determination [and] recognizing that while these implications affect individuals and communities around the world, the effects of climate change will be felt most acutely by those segments of the population that are already in vulnerable situations owing to factors such as geography, poverty, gender, age, indigenous or minority status and disability.'

30. In 2010, the statement by the UN Human Rights Council was adopted in the 'Cancun Agreement' under the UNFCCC. The Agreement adds to the statement of the UN Human Rights Council, stating that *'climate change represents an urgent and potentially irreversible threat to human societies and the planet, and is thus required to be urgently addressed by all the parties*.'

31. In 2001, the European Court of Justice commented on the relationship between climate change, sustainable energy and the right to life in the following manner:[8]

'The use of renewable energy sources … contributes to the reduction in emissions of greenhouse gases which are amongst the main causes of climate change which the European Community and its Member States have pledged to combat…It should be noted that that policy is also designed to protect the health and life of humans.'

It was precisely because of the relationship between climate policy and the protection of the right to live, one of the most fundamental rights of every human being, that the Court ruled that climate policy could limit the rights that are derived from the free market principle, one of the most fundamental principles of the EU. The Court therefore ruled that, because of the importance of the protection of the right to life and well-being, climate policy serves a higher purpose than that of the free market.

32. It is for all these reasons, as well as those mentioned later in this summons, that Urgenda c.s. challenge the unjustifiable negligence of the Dutch State in not adopting the necessary and proportionate level of ambition in its climate policy, and challenge the absence of a policy of sustainable consumption and growth as unlawful. Urgenda c.s. allege that their personal and individual rights are violated by the Dutch State and seek to protect these rights through the proceedings before this court. The consequences of the current unsustainable climate policies are such that, unless they change rapidly, a sustainable and liveable society will quickly become out of reach, and man and nature will suffer extensive and irreversible damage due to the impacts of dangerous climate change. Based on current climate policies, the goal of reaching a sustainable society – which is one of the constitutional purposes of the Urgenda Foundation – will become impossible at this time and in the future. Moreover, current climate policies will necessarily result in lasting violations of the rights and the interests of all other plaintiffs by the Dutch State.

33. Inaction in climate policy on the part of other states does not affect the individual and independent obligations of the Dutch State towards Urgenda c.s. In the Netherlands, it has long been accepted in established jurisprudence that emitting polluting substances can be unlawful even when the amount of the pollution is

[8] Case PreussenElektra, C-379/98, 13 March 2001.

relatively small compared to the total amount of pollution that occurs. In such cases, proportionate liability for the damage applies.

34. Challenging the failure of the Dutch State to adopt necessary climate policies and making the adoption of such policies enforceable is also of societal importance. This is not only because of the irreversible nature of the damage to humanity and nature in the event of dangerous climate change, which itself carries serious consequences, but also because obtaining redress from states and large commercial emitters of greenhouse gases will become practically impossible once the damage of dangerous climate change has materialised.

35. In 2006, the Stern report, drafted at the request of the British government, estimated that losses caused by yearly climate damage in the next few decades could by equivalent amount to as much as 20% of the gross world product (GWP) annually.[9] Both the European Commission and the Dutch government have used the results of this report on many occasions to inform the European and Dutch Parliaments of the costs of climate change. In 2013, Lord Nicholas Stern, the primary author of the report and former chief economist of the World Bank, announced during the World Economic Forum in Davos that the extent of damage (20% of the GWP) in his report is in fact an underestimate because global warming is accelerating faster than previously assumed. It is evident that the damage caused will run into hundreds if not thousands of billions, which will make the recovery of damages from the states and large commercial emitters practically impossible. A finding at a future point in time that certain states and corporations are liable for the damages caused by climate change would in practice lead to the immediate bankruptcy of these entities and thus a total collapse of the world economy. A scenario in which states and large multinational corporations would collapse because of such legal proceedings will most likely be seen as unacceptable by society. This is evident from the euro crisis in the EU and the credit crisis in international banking. During these crises, states and large corporations were seen as being 'too big to fail', as their downfall would lead to a collapse of large parts of the world economy. As a result, claiming compensatory relief after the damage from climate change has materialised will necessarily have negative consequences for society that would come on top of the damage that is caused by climate change itself.

[9] Stern Review: The Economics of Climate Change, 2006.

36. Urgenda c.s. are of the opinion that only the legal obligations to exercise precaution, to refrain from violations of international law, to prevent foreseeable harm, and to respect fundamental human rights can provide society with adequate protection against the dangers of climate change. It is for these reasons that Urgenda c.s. wish to obtain a legal declaration from this court of the obligations of the Dutch State to take adequate emission reductions measures and any other legal obligations to this end.

37. In the specific situation in which the Netherlands finds itself, much is at stake. There are regions in the world where the impact of climate change will undoubtedly be more severe in the short term, but the Netherlands is also already experiencing now the consequences of continuous warming and will only do so more and more in the coming decades. Just as is happening in other societies around the world, in the Netherlands the most vulnerable groups in society will be hit first and hardest. One could call this the discriminatory effect of climate change, because due to their limited means the most vulnerable amongst us will have too little means to adjust to the negative consequences of climate change.

38. This is also shown by the increase in the incidence of heat waves in the Netherlands. Scientific literature has established the relationship between climate change, heat waves and health-related issues including mortalities.[10] Based on these scientific findings, the Ministry of Public Health, Well-being and Sport drew up the 'National Heat Plan' in 2007. The report defines the 'vulnerable' as falling into one of the following categories: the elderly, residents of nursing homes, the chronically ill, people in social isolation, people with obesity, children, and the homeless. The report states that:

'*Studies show the likelihood that the climate in the Netherlands will change. Temperatures are rising and extreme weather events are becoming more likely. For*

[10] See for instance *Eurosurveillance*, Volume 10, Issue 7, 1 July 2005
'Surveillance report: The effect of the summer 2003 heat wave on mortality in the Netherlands'. The report describes 1,400 to 2,200 heat-related deaths that occurred in the summer of 2003, the majority among the elderly. See also the European Environment Agency in the report 'Climate change, impacts and vulnerability in Europe 2012', which claims that heat waves can be expected to occur more frequently and for longer periods. The report also claims that every 1 degree increase in temperature in one region will lead to 1 to 4% more deaths within that region as a result of heat stress which will affect the elderly and socially disadvantaged the most.

this reason, the health care sector will have to properly prepare itself for periods of prolonged heat ... Heat waves in 2003 and 2006 have shown that prolonged heat conditions are detrimental to public health. In the Netherlands, the death of a few hundred people has been directly connected to these periods of persistent heat. Vulnerable people especially experience health issues … In addition to mortality amongst the vulnerable groups as a result of heat waves, a much larger group of people experiences health-related complications and discomfort. Their quality of life is affected during periods of prolonged heat waves … severe health complications, including decreased sense of well-being, skin disorders, dehydration, respiratory and circulation problems, and heat stroke will occur. In the worst scenario, these circumstances can lead to death. The health issues relating to heat waves will worsen due to two developments.'

This statement is followed by further explanation of the effects of climate change and of the increase of life expectancy. The latter development will cause the group that is at risk of heat stress to grow considerably. Thus by 2050, when the emissions of the past decades have reached their full heating potential, large sections of the population that are currently in their thirties, forties and fifties will fall within the group that is at risk of suffering the negative consequences of heat waves as described in the 'Heat Plan'.

39. Heat stress is but one of the consequences of climate change that the Netherlands is experiencing and which will increase over time. As has been reported widely, including the previously mentioned 2012 report from the Court of Audit, the climate implications for the Netherlands in the next decades will also involve issues such as coastal floods, overflowing rivers, flooding of streets and houses due to heavy precipitation, water shortages, deterioration of water quality, soil salinity, waterlogging, and drought. Some of the other consequences addressed by the Council of Audit relate to the loss of biodiversity in the Netherlands, the implications for agricultural productivity, for the general health of the Dutch population (besides heat stress, these include the increase of infectious diseases, deteriorating air quality, increased UV exposure and increased incidence of water-related and food-related diseases), and the implications for the energy sector and for industries (water-cooling issues, worsening navigability of rivers, and infrastructure problems due to weather extremes).

40. The consequences of climate change as described by the Council of Audit leave aside the impacts occurring in the rest of the world that will also influence the situation in the Netherlands. The Netherlands will be strongly influenced by these occurrences as well. In the present globalised world, there is a large independency between countries and continents with respect to their ability to fulfil their basic needs including food and energy security and raw materials. Disruptions of food production due to failed harvests caused by droughts and floods will also affect the Netherlands. Migrations caused by changing weather patterns will also affect the Netherlands and the EU. In this context, we refer to the decision by the EPA in which the implications of climate damage in other countries are qualified as a safety and health risk for the citizens of the United States of America. This is no different for the Dutch citizens.

41. The fact that the Netherlands lies in a delta region cannot be ignored when assessing the risks of climate change. Rising sea levels and more frequent and increasingly powerful storms directly affect the Netherlands. Even more intrusive is the scenario predicted by scientists in which an increase of global temperature above 2 to 3 degrees Celsius – note that this is the course we are currently on – would lead to an irreversible melting process of the Greenland ice mass, which would lead to a sea level rise of 6 to 7 meters. Concerning such a scenario, the Delta Commission (the Veerman Commission) stated in its 2008 report to the government that *'It should be anticipated that sea level rises of 0.65 to 1.30 meters in 2100 and 2 to 4 meters in 2200 are a real possibility.'*[11] Such sea level rises would make large areas in the Netherlands uninhabitable. Taking into account what has been discussed previously regarding the delay in the climate system, the reality of these scenarios will depend in large measure on the actions that are taken in the next decades. These proceedings therefore also affect the habitability and liveability of large parts of the Netherlands in the future.

42. This leads us to another important aspect of these proceedings: the protection of our children, grandchildren and the generations of Dutch citizens after them. Multiple treaties, the Charter of Fundamental Rights of the European Union, and the judgements of several courts state the importance of legal protection for future generations. A world in which dangerous climate change has become a reality will

[11] Findings of the Dutch *Deltacommissie 2008*, Working together with water; A living land builds for its future.

affect the rights of our youth and future generations much more severely than during our own lifetimes. The state of the world they live in will be determined by the actions we take in the coming years. If we fail, they will face a considerably more unstable and unpredictable world – a world in which a substantial part of the biodiversity will disappear or already be gone; a world where the ecosystems that mankind depends on for food, water and raw materials are overburdened and partly collapsed; a world in which large increases of extreme weather events will make parts of the world uninhabitable and where extreme weather will regularly cause significant damage to society. No one can be pleased at the thought of leaving behind such a legacy.

43. This lawsuit is about us, our children and our legacy to them and to future generations. This lawsuit is about the necessity to reduce greenhouse gas emissions and the legal enforceability of the duty owed by the Dutch State to make those reductions happen.

1.2 The core of the case

44. The situation as has been set out above has led the Urgenda Foundation (hereafter referred to as Urgenda) to start these proceedings against the Dutch State. After publication of its intent, many more individuals decided to join Urgenda as co-plaintiffs.

45. The core of what Urgenda and all other plaintiffs are seeking in these proceedings is an order directing the Dutch State to take action to limit the amount of CO_2 emissions to 40% below the 1990 level by 2020. All other claims are similar in scope, but are either derived from, supportive to, or less demanding than this core claim.

2. Standing

2.1 Introduction

46. Article 3:303 of the Dutch Civil Code (hereafter DCC) determines that a (legal) person can file a complaint before a civil court only when that person has sufficient individual and personal interest in that claim.

47. Article 3:305a DCC contains an exception to that rule. On the basis of that provision, a legal entity such as a foundation or association can also file a complaint when it is aimed at protection of a general interest, or the collective interests of other persons, insofar as that interest is formulated as one of the constitutional purposes of that legal entity. Such an organisation will only be given standing in its complaint after it has made sufficient attempts to reach its demands in a constructive dialogue with the target of its complaint.

48. In relation to the standing of the Urgenda Foundation, insofar as it is not acting as legal representative of all other plaintiffs, it is clear that its claim aims to protect an issue of public interest that lies at the core of its constitutional purpose, that is, to protect the interests of current and future generations in order that the ecosystems and the liveability of the planet are not severely put at risk by planetary heating and climate change caused by humans. The Urgenda Foundation and all other plaintiffs that are legally represented by it (jointly referred to as 'Urgenda c.s.') want to preserve the planet as a sustainable place for future generations to live.

49. The Urgenda Foundation (hereafter referred to as 'Urgenda') is of the position that it has standing in these proceeding on the basis of article 3:305a DCC. This will be further elaborated upon in the following.

50. Urgenda – a contraction of the words 'Urgent Agenda' – was founded in 2007 as an initiative of the Dutch Research Institute for Transitions (Drift), an institute for the transition to a sustainable society, at the Erasmus University in Rotterdam. In its creation, the foundation cooperated with dozens of 'founding partners', including programmes such as Knowledge for Climate (http://knowledgeforclimate.climateresearchnetherlands.nl/), Transumo (a programme for sustainable transport) and PSIBouw (a programme for sustainable building).

51. Urgenda is a non-governmental organisation that has gained the Dutch ANBI status. The official purpose of Urgenda, as stated in its articles of incorporation of 17 January 2008 (see Exhibit 1) is 'to *stimulate and accelerate the transition to a sustainable society, starting in the Netherlands*.' From its creation, the prevention of climate change, through the reduction of CO_2 emissions, has been one of the main goals of Urgenda. The sectors that represent the largest amounts of CO_2 emissions are the energy sector, construction sector, transport and mobility, and the food sector. For this reason, these four sectors have formed the main targets of Urgenda's activities. Most of Urgenda's employees work with these sectors to function as a driver and catalyst of the transition towards sustainable practices.

52. At the request to the then acting Minister for Planning and Environment, Jacqueline Cramer, Urgenda has participated in the development of an alternative political agenda for climate policy and of `breakthrough programmes´ for sustainability in the construction, mobility and food sectors.

53. Urgenda's articles of incorporation also states that the organisation aims to 'create a sustainability platform that will develop a vision of a sustainable Netherlands in the year two thousand fifty (2050), functioning as a motivating and inviting perspective for all who work on sustainability.' At present, this platform consists of 35 members, all individual leaders in the field of sustainability, from a wide range of backgrounds in business, media, universities, think tanks, governments, intermediaries and NGOs. All members of the Urgenda Platform participate in personal capacity. Current members of the platform are Peter Bakker, former CEO of TNT and current chairman of the World Business Council for Sustainable Development; Matthijs Bierman, director of Triodos Bank; Annemieke Nijhof, director of Tauw Group; Jeroen de Haas, CEO of Eneco; Peter Molengraaf, CEO of Alliander; Ed Nijpels, chairman of NL Ingenieurs and former Minister for the Environment; Willem Lageweg, director of MVO Nederland; Remco Timmer, design manager of Philips; Thomas Rau, director of RAU Architects and Turntoo; Maurits Groen, director of MGMC, Wubbo Ockels and Helga van Leur. Together they formulated a vision for 2050 and are an active think-and-act tank for Urgenda. The majority of the platform members are working on the prevention of climate change, each in his or her own way, from generating renewable energy, to simulating energy efficiency in the construction industry, to informing the public about the climate change and financing climate projects.

54. The articles of incorporation of the Urgenda Foundation also states that '*Urgenda will draft an action plan for the coming fifty (50) years that will be executed with partners in society*'. This action plan was drafted in 2007 and is constantly updated. The action plan sets out the targets and associated actions that will reduce emissions in the Netherlands. These targets include: 1000 CO_2-free streets, and 100,000 civilians who produce their own renewable energy through wind turbines or solar panels; 1 million electric cars in 2020, and large scale wind parks at sea in 2020, and the goal of providing the Netherlands within 25 years with an energy supply that is the cleanest in Europe, robust, reliable, secure and affordable.

55. In 2020, Urgenda started the 'We Want Sun' (*wij willen zon*) campaign, which was the first collective procurement project in which thousands of Dutch inhabitants installed over 50,000 solar panels on their roofs. After this, Urgenda started a new campaign in 2012 branded 'We Want Action' (*wij willen actie*). This campaign comprises a wide range of actions that aim to put the urgency of climate change on the map, as well as specific actions to reduce emissions and thus slow climate change.

56. As been mentioned above, sustainability stands at the centre of Urgenda's activities. Urgenda carries the motto 'going sustainable, faster, together' (*samen sneller duurzaam*).

57. In 1987, the United Nations World Commission on Environment and Development published the report 'Our Common Future', also known as the Brundtland Report. In this report, the definition for sustainable development that is now commonly used was stated as '*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*.'[12] Where sustainability is mentioned in the articles of incorporation of Urgenda, it relates to this definition.[13]

58. It can thus be concluded not only that sustainability is a general interest defined in the articles of incorporation of Urgenda, but also that it is a collective interest of current and future generations that gives Urgenda additional grounds for standing in this procedure.

59. Sustainability in its nature includes the interests of both current and future generations. This intergenerational aspect of sustainability has been recognised in several international treaties, in climate-related legislation and regulations and in a number of courts. The Charter of Fundamental Rights of the European Union for instance states in its preamble that *´Enjoyment of these rights entails responsibilities and duties with regard to other persons, to the human community and to future generations.'* Likewise, the Aarhus Convention states that *'every person has the right to live in an environment adequate to his or her health and well-being, and the duty, both individually and in association with others, to protect and improve the environment for the benefit of present and future generations.´* The UNFCCC states: *'The Parties should protect the climate system for the benefit of present and future generations of humankind.´*

60. In a judgement of 2 May 2001, the District Court of The Hague held that article 3:305a DCC can serve as the basis for the standing of future generations in civil procedures: *'The interest that is claimed by the plaintiffs materialises only after 2030. Because it is evident that actions have to be undertaken in the present to serve those interests, their claim must be held to be sufficiently specific as defined in article*

[12] See: http://www.un-documents.net/wced-ocf.htm.

[13] Although there are many definitions of sustainability, the Brundtland definition is the one that is most commonly used.

3:305a DCC. On this basis, the plaintiffs have standing in their claim before this court.'[14]

61. As was mentioned, Urgenda has determined in its articles of incorporation that it aims '*to stimulate and accelerate the transition to a sustainable society, starting in the Netherlands*.' The last part of this sentence aims to express that the interests that Urgenda represents are not limited to the Netherlands. Climate change and sustainability are transboundary in their nature and thus have strong international dimensions.

62. The board and management of Urgenda consist of the following persons:

- Professor dr. ir. Jan Rotmans, Professor of Transitions and Transition Management (Chair). Professor Rotmans has conducted years of research into the causes and effects of climate change during the period when he was working for the State Institute for Health and Environment (RIVM) and the International Panel on Climate Change (IPCC). In this capacity, he developed one of the first climate models that simulate the global effects of human activities on the climate. The IMAGE model (Integrated Model to Assess the Greenhouse Effect), which was the subject of his doctoral studies, has been used in the context of the IPCC, the negotiations of the Kyoto Protocol and many other preparatory studies in the context of the UNFCCC meetings. Almost 30 years after its first development, IMAGE is still being used and further developed by the Dutch Environmental Assessment Agency. The IMAGE model has set a standard for integrated climate modelling.

- Professor dr. ir. Pier Vellinga, Professor of Climate Change. Professor Vellinga was one of the first scientists to be published about climate change. He is an internationally acclaimed authority in the field of climate science and has led several substantial research projects in the Netherlands and the European Union. When the IPCC received the Nobel Peace Prize in 2007, Professor Vellinga received a personalised certificate for his invaluable contribution to the preparations of the Assessment Reports of the IPCC.

- Professor ir. Jan Stuip, Professor Emeritus of Construction Technology Policies, former Director of CURnet and former Chair of the programme network that formed the basis for the Urgenda Foundation.

[14] In this judgement, reference is also made to the precautionary principle. This principle, which will be expanded upon in the following chapters, has been laid down in article 3.3 of the UNFCCC and elsewhere. As will be discussed, this principle functions as a basis for urgent and fast action against climate change.

- Mr. drs. Marjan Minnesma MBA, is the Director of Urgenda and as such is responsible for the daily business of the organisation. Ms. Minnesma has previously worked at the Dutch Organisation for Energy and Environment (NOVEM, currently operating under the name of Rijksdienst voor Ondernemend Nederland), Director of campaigns for Greenpeace Netherlands, Research Director for the Institute for Environmental Studies at the VU University (VU) in Amsterdam, and Director of the Dutch Research Institute for Transition (DRIFT) at the Erasmus University in Rotterdam. Ms Minnesma has been chosen by of jury of her peers as the 'most influential person in sustainability' in the Netherlands for the past three years in a row (2011, 2012 and 2013) in an annual poll conducted by a Dutch national newspaper (Trouw Duurzame Top100). In 2011, she received the HIER Climate Medal from Princess Laurentien of the Netherlands in recognition of the climate-related activities of Urgenda.

63. As the foregoing makes clear, renewable energy and other climate-related subjects play a central role in the activities of Urgenda. This is also evident from the publications, opinion articles and public appearances of Urgenda that relate to climate and energy (see www.urgenda.nl/actueel/in-de-media/). Moreover, in 2014 Urgenda will publish an energy transition plan for the Netherlands entitled 'A 100% sustainable energy supply in the Netherlands in 2030, If there's a will there's a way!' (*Nederland 100% op duurzame energie in 2030. Het kan als je het wilt*). In 2013, Urgenda also initiated a student campaign calling attention to the fact that 4/5 of the proven fossil fuel reserves will have to stay underground if we are to prevent dangerous climate change. All of this shows that climate change and CO_2 emission reductions has been one of the focus points of Urgenda's activities for years.

2.2 Permissible claim

64. The claim that Urgenda is presenting before this court fits the type of claims that the legislator explicitly aimed to make possible when adopting article 3:305a DCC.

65. The legislative history of the adoption of article 3:305a DCC shows that the article encompasses more than merely financial interests. In his opinion to the Dutch Supreme Court Judgement of 8 June 2007 (NJ 2007, 322), Advocate General Prof. mr. J. Spier wrote this concerning the scope of article 3:305a DCC:

'We will use a topical subject from the public transport sector as an illustration (assuming that railways are part of the Dutch State). After a number of train collisions that followed each other in a short interval, it is discovered that safety measures to prevent trains from passing a red signal are lacking in a great number of places along the railway lines. The responsible authority is planning to take measures that will require several years to take effect. A union of travellers is of the opinion

that the implementation of these measures will take too long. There is no doubt that such an organisation could start legal proceedings on the basis of article 3:305a DCC in which it asks for a declaratory judgement stating that the period in which the responsible authority is planning to implement the safety measures is too long.´

66. Following this judgement, a number of commentators in the legal literature have argued that article 3:305a DCC provides the legal basis for starting proceedings that relate to climate change. See for instance Professor mr. C.J.J.M. Stolker in the Text and Commentary on the Dutch Civil Act, article 3:305a (paragraph 1): *´It is not inconceivable that this article can function as the basis of an action against activities that contribute to climate change. In principle, article 3:305a does not seem to prevent the filing of a claim calling for a prohibition of excessive emissions and an order to take the appropriate measures to prevent such emissions'.*

67. The claims of Urgenda in these proceedings are precisely of the nature mentioned by Professor Stolker: a prohibition of excessive emissions and an order to take appropriate measures to prevent emissions, as well as a declaratory judgement, all with the aim of targeting activities that contribute to dangerous climate change.

2.3 Conferral with the Dutch State

68. On the basis of article 3:305a sub 2 DCC, a legal entity that wishes to start legal proceedings on the basis of article 3:305a should put serious effort into an amicable solution with the intended defendant.

69. In this light, Urgenda sent a letter to the Prime Minister and the other members of the Cabinet on 12 November 2012, requesting the commitment to reduce Dutch CO_2 emissions before 2020 to 40% below 1990 levels. This letter (see **Exhibit 2**) contains in brief the same information as can be found in this summons: the scientific proof and international agreement on the urgency to take the emission reduction measures that are demanded by Urgenda.

70. By letter of 11 December 2012 (**Exhibit 3**), the government responded to Urgenda's letter through the Minister of Infrastructure and Environment Ms. Wilma Mansveld. In this letter, the necessity to reduce emissions to the level demanded by Urgenda is not denied. To the contrary, the letter acknowledges the fact that the global efforts to reduce emissions are insufficient and that this is problematic: *'It is highly problematic that the collective global efforts at this moment are insufficient to keep the goal of staying under 2 degrees average global temperature increase within reach*.'

In the letter, the minister also acknowledges the need for a `*widely accepted policy framework that will lead to sufficient action to keep the goal of 80% to 95% emissions reductions before 2050 within reach.*'

Despite this, the letter does not commit to the demands made by Urgenda.

71. Following Urgenda's letter, a green and animal welfare party put a vote to parliament on 14 November 2012 (see **Exhibit 4**). The group proposed calling on the government to take all necessary measures to comply with the 2-degree target of the UNFCCC, more specifically to reduce CO_2 emissions before 2020 by 40% as compared to the 1990 levels.

72. On 20 December 2012, the parliament rejected the vote with 6 members voting in favour and 138 members voting against (see **Exhibit 5**). Parliamentary papers show that no substantive discussion took place in parliament on the validity of the facts and conclusions as set forth in the Urgenda letter.

73. Following the exchange of letters, the Director of Urgenda had a meeting with the Minister of Infrastructure and Environment Ms. Mansveld. In the meeting, the minister, similar to her earlier letter, acknowledged the facts and urgency of emissions reductions to prevent climate change, but was not able to commit to the actions demanded by Urgenda. Based on the exchange of letters, the vote in Parliament and the personal comments of the minister, Urgenda came to the conclusion that a further dialogue would not lead to any action and would therefore be fruitless.

74. In September 2013, an Energy Agreement made by a number of representative organisations was embraced by the State. Besides the fact that this agreement is in no way legally binding on its parties, it does not provide for any emissions reductions and therefore has no relevance to these proceedings.

75. In these circumstances, Urgenda is of the opinion that it has sufficiently sought an amicable solution to obtain its demands and has therefore fulfilled the requirements of the article 3:305a sub 2 DCC.

2.4 Conclusion

76. Both on the basis of its articles of incorporation and through its concrete actions, the Urgenda Foundation is striving for a more sustainable society, with a special focus on reducing CO_2 and other greenhouse gas emissions. Its actions are for instance aimed at promoting the generation of renewable energy, the development of climate-neutral cities, an energy transition plan for the Netherlands and a campaign to divest from fossil fuel energy production, all with the aim of preventing dangerous climate change. A claim demanding emissions reductions from the Dutch State therefore serves the constitutional purposes of the Urgenda Foundation. This is also the type of claim for which the legislator aimed to provide standing when adopting the provision

under article 3:305a DCC. The same is applicable for the declaratory judgement that is asked of the court in this summons. Moreover, Urgenda has sufficiently sought to come to a solution to its demands through amicable means.

77. For all the above reasons, Urgenda must be provided standing before this court in these proceedings.

3. The facts

3.1 Introduction

78. Urgenda c.s. substantiate their claim with, amongst others, the following facts:
- Anthropogenic emissions of greenhouse gases, and specifically anthropogenic CO_2 emissions, change the atmosphere of the earth; the earth becomes warmer because of this, and the climate changes. Consequences can include sea level rise, more frequent flooding, greater incidence and severity of extreme weather phenomena, desertification, crop failures and drinking water shortages, and extinction of animal and plant species.
- Some regions will be hit more heavily than others, but all regions of the world will experience more negative than positive consequences in the event of 'dangerous climate change'. In a world of globalisation in which countries and economies are more and more closely linked and dependent on each other, countries will also experience indirectly the effects of climate change elsewhere in the world (for example, crop failures in Russia or in America).
- When the earth experiences a worldwide warming of 2 degrees or more, this warming can be said to be 'dangerous' for the earth's ecosystems – that humans depend on for their continued existence – and for human communities.
- These facts are emphatically recognized by the global community of countries and organizations of countries (such as the EU).
- There is practically unanimous scientific and political consensus that anthropogenic CO_2 emission must be cut back quickly and in sufficient degree before 2020, because of the dangers that these emissions pose to the planet and to humanity as a whole.

79. For the scientific evidence supporting these facts, Urgenda c.s. refers principally to the reports of the Intergovernmental Panel on Climate Change (IPCC), as do the countries that are signatories to the UN climate treaty. In addition, Urgenda c.s. will also cite other sources of evidence, but the reports of the IPCC are the principal scientific basis of the facts upon which Urgenda c.s. base their demands.

80. In elucidation of their claims, Urgenda c.s. will bring forward other facts as well; these facts too will be supported with evidence as they are presented.

81. With regard to the climate science to be discussed hereinafter, Urgenda c.s. will begin with a short explanation of the (historical) development of the CO_2 concentration in the atmosphere, as is appears in the IPCC reports. In view of the great weight that Urgenda c.s. attribute to the findings of the IPCC, they will then give a brief sketch of the development of climate science up until the founding of the IPCC. Then the founding, position, and operational procedures of the IPCC will be discussed. Next, Urgenda c.s. will present the findings of the IPCC that prove the facts posited by Urgenda c.s. Then Urgenda c.s will bring forward other sources in support of the stated facts.

3.2 Climate science

3.2.1 The (historical) development of the amount of CO_2 in the atmosphere

82. As indicated in the citation of the Netherlands Environment Assessment Agency in the introduction (§6), the large-scale burning of fossil fuels that started with the industrial revolution has increased the concentration of CO_2 in the atmosphere by 40%. Based on measurements made in the ice layers of Greenland and Antarctica that have formed over a period of hundreds of thousands of years, scientists know that around 1750, at the start of the industrial revolution, the concentration of CO_2 was 280 ppm (parts per million), meaning that of every 1,000,000 molecules in the atmosphere, 280 are molecules of CO_2.

83. According to the IPCC, in the 10,000 years preceding the industrial revolution, that is, in the period after the most recent ice age (the Holocene), the concentration of CO_2 in the atmosphere has not been lower than 260 ppm and not higher that 280 ppm; a bandwidth thus of only 20 ppm. Because of this, the climate in the past 10,000 years has been rather stable. That stable and moderate climate during the past 10,000 has formed to a large degree the present ecosystems and biodiversity of the planet. These ecosystems and biodiversity are optimally ('Darwin') adapted to the present-day stable and moderate climatological conditions, but they are also dependent on those conditions.

84. It was in that stable and moderate climate that human beings, previously nomadic hunters and gatherers of food, 'discovered' agriculture. In that same stable climate, humanity has since been able to develop its agricultural production sufficiently to be able to feed a world population of billions of people.

85. The climatological variations that occurred prior to the industrial revolution, such as the warmer periods around 900 CE (at which time, for example, vineyards flourished in England) and the colder periods in the 16th and 17th centuries (at which time the

winter scenes depicted in the paintings of the Dutch masters took place), all came about within the bandwidth of 20 ppm.

86. Not only did the bandwidth remain limited to 20 ppm in the 10,000 years prior to the industrial revolution, but according to the IPCC the bandwidth over the last 650,000 years was also limited; the concentration level of CO_2 in the atmosphere during those 650,000 years has not been higher that 300 ppm according to the IPCC. This has been determined by scientific research based on drilling into the historical ice layers in Greenland and Antarctica already mentioned.

87. In 2013, the concentration of CO_2 is at the level of 400 ppm, that is, 100 ppm higher than the maximum value of its concentration during the last 650,000 years, and even 120 ppm higher than the maximum value during the last 10,000 years, the period in which human society has become civilised.

88. The speed with which humanity has changed the chemical composition of the atmosphere since the industrial revolution is enormous. Perhaps the most striking and alarming comparison is that beginning in the 1990s, humanity has added 20 ppm of CO_2 to the atmosphere every decade; this is as much per decade as the maximum bandwidth has been during the last 10,000 years. Furthermore, annual global emissions are still increasing, and prognoses indicate that by around 2030 the present concentration of 400 ppm will have increased to 450 ppm. As will be further explained in this document, the level of 450 ppm must not be exceeded if there is to be a 50% chance that the earth will not warm by more than two degrees.

89. How did the IPCC arrive at these scientific findings with respect to the relationship between CO_2 and the warming of the earth and the concentration levels that are discussed here? First we will look back briefly at climate science prior to the establishment of the IPCC by the United Nations.

3.2.2 Climate science up to the establishment of the IPCC

90. As early as 1896, Swedish scientist Svante Arrhenius, working at the University of Stockholm, concluded based on his studies and measurements that the earth would become warmer as a result of the large-scale burning of fossil fuels (at that time mainly coal).

91. In the 1930s, British meteorologist Guy Stewart Callendar began compiling data from 150 weather stations around the world and from measurements of his own. He found that from 1890 to 1910 the concentration of CO_2 had risen from 290 ppm to 303 ppm; by 1930, it had reached 310 ppm. Based on his findings, Callendar concluded in 1938 that humanity was changing the composition of the atmosphere at a rate that

was highly exceptional on geological time scales, and that it was therefore necessary to investigate the possible effects of such a change.

92. In the 1950s, American chemist Charles David Keeling began recording the concentrations of CO_2 in the atmosphere with greater accuracy using better technology, and continued to do so together with a team of scientists in the following decades. He presented his data in a graph that has since been called the Keeling curve. When Keeling began his measurements, the CO_2 concentration was 315 ppm, in 1980 it was 340 ppm, and in 1990 it was 355 ppm. Since 1978, it has also been possible to make measurements using satellites, giving coverage of the entire world. These measurements confirmed the reliability of the earlier data.

93. In 1957, oceanographer and professor Roger Revelle and Austrian chemist Hans Suess published a report that would turn out to be the starting shot for the broad international climate research that has taken place since then. Revelle and Suess concluded in their report that it was likely that CO_2 emissions by humans would lead to warming of the earth. With their report, they countered another scientific theory that held that it did not matter how much CO_2 came into the atmosphere because of human activities, because the oceans would take up all this extra CO_2. Revelle and Suess showed that the oceans absorb only 50% of the CO_2 emitted by humans, because the oceans release some of the absorbed CO_2 back into the atmosphere again as a result of chemical processes. They also showed that this release becomes greater as the water becomes warmer (in other words, as temperatures rise, the oceans will be able to absorb a progressively smaller percentage of the CO_2 emitted by humans).

94. The report by Revelle and Suess in 1957 made it clear for the first time that the carbon cycle involves a very complex interaction between the atmosphere, the oceans, land, and ecosystems, and that human emissions of CO_2 might have greater effects on the global climate than had previously been assumed.

95. Given that a change in climate as the result of the altered composition of the earth's atmosphere because of CO_2 emissions is by definition a worldwide and thus international problem, it was obvious that the subject of climate change would be discussed chiefly within the context of the United Nations.

96. Climate change was taken up on the agenda of the United Nations for the first time in 1972, during the UN conference in Stockholm. During that conference, it was decided to create a special UN organisation to address the issue of climate change and other international environmental issues. The United Nations Environment Programme (UNEP) was established to carry out that decision.

97. In 1979, the first climate conference took place in Geneva, Switzerland, organized by the UNEP together with another UN organisation, the World Meteorological Organization (WMO).

98. In 1985, the UNEP and WMO organised a conference in Villach, Austria in which 29 countries participated. At the end of this conference, a consensus was reached by the scientists and a message to politicians was formulated:

'*As a result of the increasing concentrations of greenhouse gasses, it is now believed that in the first half of the next century a rise of global mean temperature could occur which is greater than any in man's history.*

[...]

The rate and degree of future warming could be profoundly affected by governmental policies on energy conservation, use of fossil fuels, and emission of greenhouse gasses.'

99. In 1988, a new conference was held in Toronto, Canada, at which not only scientists but also politicians and policy makers from 48 countries were present. The closing statement stated:

'Humanity is conducting an unintended, uncontrolled, globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war.'

100. In Toronto, it was concluded that if CO_2 emissions were to continue to rise, warming could be 1.5 to 4.5ºC in 2050. The conference urged the international political powers to achieve an emissions reduction in 2005 of 20% relative to the emissions level of 1988. This appeal may properly be called a historic event; for the first time, a scientific conference called on politicians to create a specific policy with a concrete goal. It showed how concerned scientists had become.

3.2.3 The establishment and operational procedures of the IPCC

101. In response to the Toronto conference and the historic appeal made to politicians by the scientists there, the IPCC was established in 1988 by the UNEP (United Nations Environment Programme) and the WMO (World Meteorological Organization). In that same year, 1988, the General Assembly of the United Nations supported the establishment of the IPCC by the UNEP and WMO.

102. At its establishment, the IPCC was divided into three Working Groups and was given the assignment of assessing the current state of affairs with respect to:
1) the existing scientific knowledge about the climate system and climate change (Working Group I);
2) the consequences of climate change for the environment, the economy, and society (Working Group II); and
3) the possible strategies to address these changes (Working Group III).

103. The IPCC was asked to prepare a report covering these three working areas twice in every decade. In 1990, the IPCC published its first Assessment Report, followed by new editions in 1995, 2001, and the most recent (AR4, i.e. Fourth Assessment Report) in 2007.

104. It is expected that the Fifth Assessment Report (AR5) will be released at the end of 2014. Meanwhile, on 27 September 2013 the report of Working Group I was published as part of AR5. Urgenda c.s. bring the 'Summary for policy makers' into this procedure as **Exhibit 6**. The findings of Working Group I confirms and reinforces the findings of AR4 in 2007. Urgenda c.s. quotes from this Summary:

'Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased (see Figures SPM.1, SPM.2, SPM.3 and SPM.4). {2.2, 2.4, 3.2, 3.7, 4.2–4.7, 5.2, 5.3, 5.5–5.6, 6.2, 13.2}

'Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850 (see Figure SPM.1).'

105. The IPCC is a scientific organisation operating under the auspices of the United Nations. The IPCC studies, inspects, and assesses the most recent scientific, technical, and socio-economic information that is produced worldwide and is relevant to an understanding of climate change. The IPCC conducts no research of its own, commissions no research, and maintains no climate-related data or parameters of its own.

106. Thousands of scientists located across the globe contribute to the work of the IPCC by voluntarily submitting and presenting their publications to the IPCC. Review and examination is an essential part of the IPCC process, in order to be assured of an objective and complete assessment of the information currently available. It is a goal of the IPCC to provide oversight of points of view and expertise.

107. The IPCC is not only a scientific organisation; it is also an intergovernmental body. Membership is open to all States that are members of the United Nations and the WMO. At this moment, 195 countries are members of the IPCC.

108. To put it briefly, the IPCC has the task of acting as an independent evaluator of all existing published information in the world about climate science, obtained from research carried out by scientists over the whole world on their own initiative and offered voluntarily to the IPCC. The IPCC has only the task of drawing scientific conclusions where possible from all that scientific work. The task and operational procedures of the IPCC are set down in a number of 'Principles governing IPCC work' (**Exhibit 7**).[15]

109. In the relationship between the IPCC and the member states, it is up to the states to formulate policy based on the scientific conclusions of the IPCC. The IPCC may not do this itself, and it is to limit itself to collecting and objectively evaluating the scientific information that is relevant to making political and policy decisions. Quoting Principle 2 of the Principles Governing IPCC Work:

'The role of the IPCC is to assess on a comprehensive, objective open and transparent basis the scientific, technical and social-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaption and mitigation. IPCC reports should be neutral with respect to policy, although they may need to deal objectively with scientific, technical and social-economic factors relevant to the application of particular policies.'

110. In order to emphasize once again how much care and deliberation is involved in preparing an Assessment Report of the IPCC, Urgenda c.s. note that a draft report of the IPCC (or the separate documents that it comprises) must be reviewed at two levels before it can be approved; see principle 3: '*IPCC documents should involve both peer review by experts and reviews by governments.'*

111. In practice, the draft report is first presented to the group of external experts (i.e. not involved with the IPCC). Once the draft has withstood the critical review of these external experts, the draft report must be presented to the member nations of the IPCC for a second round of scrutiny. These countries then often send the draft to a group of their own national scientists and (national) non-governmental organisations for a second opinion. In this way, individual countries have the opportunity to make recommendations or to give commentary concerning the draft report. The feedback

[15] For more detailed information about the operational procedures of the IPCC, Urgenda c.s. refer the court to the IPCC website: www.ipcc.ch.

obtained through this review process must then be studied and evaluated once again by the IPCC so that the report can be amended as needed before being approved by a plenary meeting (principle 11): '*Conclusions drawn by IPCC working groups and any task forces, are not official IPCC views until they have been accepted by the Panel in a plenary meeting.'*

112. According to some critics, this working procedure, particularly the second 'national' review by the member states, leads to a 'weakening' of the conclusions of the IPCC, and the IPCC is left with scientific conclusions that are on the (too) cautious/conservative side.

3.2.4 An adversarial process: the special status of IPCC reports

113. The way in which the reports of the IPCC are formulated is very similar to the adversarial process familiar to us in the legal profession. First, in producing the draft reports, the IPCC gives attention to all available scientific knowledge, so that for example attention is also given to science that is sceptical about the anthropogenic character of climate change. The findings that the IPCC then lays down in its draft reports, based on all available scientific knowledge, are successively subjected to the double external review described above, in which once again there is every opportunity for divergent or dissenting scientific views to be heard and understood. Thus, in the end, a process of hearing scientific viewpoints from all sides takes place at three levels; this is a reason that the findings of the IPCC are accorded a special status. Of course, this status is also evident from the fact that all countries take the IPCC reports as a point of departure in formulating climate policy, as do all national and international institutional bodies, and courts over the whole world also accept the findings of the IPCC as basic assumptions.

3.3 The conclusion of the IPCC

3.3.1 Introduction

114. Seventeen years has elapsed between the first Assessment Report (AR1) in 1990 and the Fourth Assessment Report (AR4) in 2007. During that period, climate research and knowledge about climate change have advanced, and much can now be stated with a specified degree of scientific certainty.

115. In the IPCC AR4 report of Workgroup I in 2007, in the Technical Summary (**Exhibit 8**), an explanation is given on pages 22 and 23 of how certainty is expressed in the report. In doing so, a distinction is made between the confidence that the scientists have in the correctness of their scientific knowledge on the one hand, and on the other hand, the degree of likelihood that they estimate that a given outcome or a

given result will take place. In this way, scientists can, for example, express that they have a high degree of scientific certainty that a given event is very unlikely, or, for example, that they have a high degree of scientific certainty that the chance that a given event will take place is just as great as the chance that the event will not take place.

In the report, this confidence is expressed as:
Very high confidence: at least 9 out of 10 chance of accuracy;
High confidence: About 8 out of 10 chance;
Medium confidence: About 5 out of 10 chance;
Low confidence: About 2 out of 10 chance;
Very low confidence: Less than 1 out of 10 chance.

The standard terms used in the report to define the likelihood of an outcome or result where this can be estimated are:
Virtually certain: more than 99% probability;
Extremely likely: more than 95% probability;
Very likely: more than 90% probability;
Likely: more than 66% probability;
More likely than not: more than 50% probability;
About as likely as not: 33 to 66% probability;
Unlikely: less than 33% probability;
Very unlikely: less than 10% probability;
Extremely unlikely: less than 5% probability;
Exceptionally unlikely: less than 1% probability.

116. The important scientific findings from the IPCC's AR4 are those that are described in part below, with the degree of scientific certainty. As an introductory remark to these findings, Secretary General Ban Ki Moon of the United Nations presented this IPCC report concisely at its publication in 2007 with these words: *'Today, the time for doubt has passed. The IPCC has unequivocally affirmed the warming of our climate system, and linked it directly to human activity. Slowing and reversing the existing trends of global warming is the defining challenge of our age.'*

117. The following scientific status was established in AR4:

100% certainty

I. that it has been unequivocally established, that is, with 100% certainty and confidence, that the atmospheric concentrations of CO_2 have increased and that the earth is warming;

90-95% confidence

IIa. that it is very likely, that is, it has been established with a scientific certainty and confidence of 90% to 95% that:

a. that the temperatures measured in the northern hemisphere during the period 1950-2000 were higher than during any other 50-year period in the past 500 years, and likely the highest in the past 1300 years;[16]
b. that global warming in this century will exceed that of 0.74 degrees measured over the 20th century (0.8 degrees up to 2010);
c. that the warming can be attributed to anthropogenic (man-made) greenhouse gasses in the atmosphere;
d. that increases in CO_2 resulting from human activities are primarily due to fossil fuel use;
e. that the 2005 CO_2 concentration of 379 ppm far exceeded the natural maximum of 300 ppm over the last 650,000 years;
f. that CO_2 – given the fluctuation of atmospheric CO_2 attending transitions between ice ages and warm periods – substantially intensified past climate changes;
g. that global oceans have played a primary role in these atmospheric CO_2 fluctuations;
h. that heat waves will become more intense, frequent and prolonged;
i. that the average annual sea-level rise in this century will be larger than in the 20th century;
j. that the increasing impacts of climate change in the decades ahead can no longer be prevented by even the most stringent CO_2-reduction measures and will inevitably require adaptation to climate change;
k. that melting of the Greenland and Antarctic ice sheet masses has contributed to sea level rises recorded over the period 1993-2003;
l. that all coastal regions of the world are at an increased risk of processes such as coastal erosion and coastal land loss;
m. that if the global mean temperature increases 2 to 3 degrees, societies in all regions of the world will be adversely affected (due to diminishing returns of the world will be adversely affected (due to diminishing returns or rising costs));
n. that climate change is contributing to the incidence of disease and premature death both directly through temperature changes, precipitation, sea level rise and more extreme weather, and indirectly through changes in the quality of water, air and food quality and ecosystems;

[16] Only the northern hemisphere is cited, because the rate of warming here is faster than in the southern hemisphere, due to its larger landmass. The southern hemisphere has larger ocean mass, which slows the warming process (water warms more slowly than land).

o. that industries, cities, towns, and society as a whole are sensitive to changes in the scale, intensity, and frequency of more extreme weather;
p. that physical and biological systems on all continents are already being adversely affected by recent climate change, including warming and acidification in most oceans;
q. that the warming of the last 50 years is having a discernable impact on ecosystems, as observed in the earlier timing of spring and leaf unfolding and in shifts of southern terrestrial and marine animal and plant species to northern latitudes and of animals and plant species from low to higher-elevation (alpine) regions;
r. that the meridional overturning circulation (MOC; warm; south-north sea current) of the Atlantic Ocean will slow down 25% or more during this century, effecting marine ecosystems, fisheries, ocean CO_2 uptake and oceanic oxygen concentrations;[17]
s. that the increased atmospheric concentration of the greenhouse gas methane is predominantly due to fossil fuel use and agriculture, and that the increase in nitrous oxide is primarily due to agriculture;

IIb. that in addition to these general effects, the following effects have been established with a scientific certainty or confidence of **90% to 95%** with specific reference to Europe:

t. that Europe is experiencing glacial melt, longer growing seasons and a shift of natural habitats, which is consistent with predicted changes in Europe due to of climate change;
u. that Europe is and will be experiencing ever more extreme weather events, though with changes differing from one region in Europe to another (see below);
w. that the water stress in Europe will increase due to disparities between (overtly) wet and (overtly) dry periods;
x. that the vast majority of ecosystems and biodiversity in Europe will have difficulty adapting to climate change (see below);
y. that difficulties will arise for many European economic sectors, including agriculture, tourism, water-supply and electricity;

66%-90% certainty

IIIa. that it is likely, that is, established with a scientific certainty or confidence of 66 to 90%:

[17] In spite of the MOC's reduced strength, the IPCC expects water temperatures in the North Atlantic Ocean and around Europe will continue to rise due to the greater impact of greenhouse gases on temperature.

z. that the increase in extreme temperature changes, including heat waves and record temperatures, is being caused by anthropogenic (man-made) greenhouse gas emissions;
aa. that semi-arid regions (such as southern Europe and the western US) will suffer a decrease in water supply and water recourses;
bb. that by 2050 river runoff will increase by 10-40% per year at higher latitudes and in some wet tropical areas and decrease by 10-30% per year at lower latitudes and in dry tropical area's;
cc. that industry, infrastructure, cities, and towns in coastal, deltaic and catchment areas are generally more vulnerable ot climate change;
dd. that industry, infrastructure, cities, and towns are more vulnerable in regions where the economy is dependent on climate-sensitive resources, such as in agriculture, forestry, fishery, and tourism;
ee. that vulnerability varies at the local level, and there will even be advantages locally, but the overall trend is that as climate change intensifies, its adverse effect on society will come to dominate (and with a 2 to 3 degree rise in temperatures the effects will be adverse for the whole world; see above);
ff. that while CO_2 reductions measures can no longer halt the impact of climate change in the decades ahead, without those measures climate change will obtain such proportions that certain ecosystems will be insufficiently able to adapt and be lost, and further that the large majority of human systems could only continue at very high social and economic cost;
gg. that in many regions of the world, even in those with declining precipitation due to climate change, the severity of rainfall will increase and the resulting higher risk of floods will have ramifications for society, infrastructure and water quality;
hh. that European countries with a maritime climate will generally experience more flooding in winter and can expect 15% more runoff via waterways as early as 2020 to 2030;
ii. that overall availability of water resources will shift to be higher in winter and lower in summer;
jj. that the social-economical costs of climate change will increase in areas where the weather becomes more extreme and/or extreme weather events become more frequent;
kk. that while the social-economic costs of climate change will be substantial in the regions most directly affected, the costs for other regions areas will also rise due to the complex structures of society, in which many sectors and regions are interlinked and influence each other;
ll. that all countries must take additional measures to address climate change and that even the richest countries are not adequately prepared for increasing extreme weather;

mm. that greenhouse gases contribute to changes in the patterns of storms and wind;
nn. that these emissions contribute to melting in the Arctic region and of the world's glaciers, and to decreasing global snow cover;
oo. that melt water is further raising sea levels (as is the fact water expands as it warms, which accounts for 70% to 75% of sea level rise);
pp. that many of the world's ecosystems will not be able to absorb the unprecedented combined effect of climate change and associated disturbances (such as flooding, drought, wildfire, insect pests and ocean acidification) on the one hand and environmental pollution and overexploitation of resources on the other;
qq. that the diminishing CO_2 uptake capacity of the Earth's oceans and biosphere in the second half of this century will amplify climate change;
rr. that by the century's end, temperatures will have increased by 1.8 to 4 degrees relative to 1980-1990, depending on the policy path chosen (i.e. 2.3 to 4.5 degrees relative to 1850; see below);
ss. that with the current level of atmospheric CO_2 and projected warming in the 21st century, extinction of animal and plant species and partial further melting of ice masses is unavoidable;

IIIb. that in addition to these general effects, the following has been established with a scientific certainty or confidence of 66-90% with specific reference to Europe:

tt. that weather extremes will become more common, with increasing winter flooding in regions with maritime climates; more flash floods throughout the year in all of Europe; more dry periods and a longer wildfire season, especially in southern Europe, and catastrophic peat fires and wild fires in dry years in central Europe; increasing ground instability resulting in rock avalanches in mountains due to the warming and melting of mountain permafrost; and healthcare challenges due to more frequent heat waves, particular in central and southern Europe;
uu. that climate change will magnify regional differences in Europe's natural resources and assets (temperature, water, agriculture, water), with warmer winters in northern Europe and warmer summers in central and southern Europe; more rain in the north and less in the south; regional shifts in land suitability for specific crops, with crop yields higher in the north and lower in the south; increasing forests area in the north and decreasing in the South; more flash floods in the north and northwest and fewer in the south and southeast;
vv. that the great majority of the ecosystems and biodiversity in Europe will have difficulty in adapting to climate change, with the loss of small glaciers and retreat of larger glaciers during the 21st century; a reduction in

foraging and breeding habitat for birds in low-lying coastal areas; increasing vulnerability of a higher percentage of European flora, with many endangered or extinct by century's end; extinction of possibly as much as 60% of Alpine flora by century's end; diminishing options for many organisms and ecosystems to adapt and none for those in tundra and Alpine regions; a possible need for new nature reserves as range shifts in many species' natural habitats mean present-day reserves will no longer be suitable at century's end;

50-66% certainty

IV. that it can been established with a scientific certainty or confidence of 50% to 66%:

ww. that greenhouse gas emissions have led to an increase in the number of tropical cyclones;

V. that it can be established with a scientific certainty or confidence of 50%:

xx. that 20% to 30% of all animal and plant species will be at increased risk of extinction if the global mean temperature increases by 1.5 to 2.5 degrees relative to 1980-1990 (i.e. 2 to 3 degrees relative to the first measurements in 1850);
yy. that 40%-70% of animal and plant species will be endangered if the temperature increases by 3.5 degrees (relative to 1980-1990),
zz. that there has already been a northward shift in some tick- and other insect-transmitted diseases;
aaa. that warming and increasing atmospheric CO_2 may have a positive effect on crops yield in higher latitude areas but adversely affect yields in more southerly and dry regions (though warming of 2 to 3 degrees would cancel out the positive effects for higher latitudes; see above) in the atmosphere, but that agricultural yields in the drier southerly regions will suffer (and by a temperature rise of 2 to 3 degrees, the benefits at higher latitudes will be nullified; see above).

118. Based on these conclusions of the IPCC, it is clear that there is sufficient scientific data available to conclude that there is a causal relationship between anthropogenic emissions and the warming of the earth, that warming and climate change are taking place and that these will lead to consequences that are nearly all negative and threatening, with a great impact on both the ecosystems and the biodiversity on which humanity depends for its survival, as well as a great impact on the various

social and economic aspects of society. Part I of the IPCC Fifth Assessment Report confirms and strengthens these conclusions.

119. Finally, Urgenda c.s. draws the attention of the court to the website of the IPCC (www.ipcc.ch), where all the IPCC reports may be examined, so that the court may, if it so desires, acquaint itself with the contents of these reports. Because the information contained in these reports is publicly available, it may be considered common knowledge. Furthermore, Urgenda c.s. directs the court to **Exhibit 9** of this summons, which consists of (i) part of the report of Working Group I of the IPCC, namely the section Frequently Asked Questions, and (ii) the 'Synthesis Report' that is an integrated summary, compiled by the IPCC itself in accordance with the usual procedures, of the three separate reports of the three Working Groups whose reports were released together in 2007 as the Fourth Assessment Report of the IPCC.
For the most recent state of affairs, Urgenda c.s. refers the court to the 27 September 2013 report of Working Group I, and to the 'Summary for Policy Makers' that is included as **Exhibit 6** with this summons.

3.4 Findings from Dutch sources

3.4.1 The Environmental Assessment Agency

120. The Environmental Assessment Agency (Planbureau voor de Leefomgeving or PBL) is a Dutch national institute for strategic policy analysis in the area of environment, nature and spatial planning. The PBL contributes to improving the quality of political and administrative decision-making by conducting outlook studies, analyses and evaluations in which an integrated approach is considered paramount. The PBL is first and foremost policy-oriented. The PBL conducts solicited and unsolicited research that is independent and scientifically sound. The PBL forms part of the central government.

121. At its website, the PBL publishes a 'climate change dossier' that includes a section with frequently asked questions (**Exhibit 10**). This section of the website summarises the most important information in the IPCC reports in a way that is accessible to the interested layperson.

122. Under the heading 'What are we certain of in relation to climate change?' the website states:

- There is hard evidence that CO_2 concentrations have not been as high as today in eight hundred thousand years
- We know with certainty that CO_2 concentrations originate from the burning of oil, gas and coal and from deforestation

- It is certain that CO_2 in the atmosphere causes the earth to warm
- It is certain that the average global temperature have risen 0.8 degrees Celsius since the start of the industrial revolution and that in North-west Europe (including the Netherlands) has risen 1.5 degrees Celsius. This rise in temperatures has been recorded with direct measurements.
- Since 2000, eight of the ten hottest years since the start of temperature measurement in 1850 have occurred.
- Average sea levels are rising and glaciers are disappearing worldwide.

123. Under the heading 'What are we almost certain of?':

- The IPCC has established that it is very likely (more than 90% chance) that the largest part of global warming in the past 50 years has been caused by human-related emissions of greenhouse gasses.
- The relative slowing of global warming in the last couple of years is very likely the result of variations in ocean currents (internal variability of the climate system), with possibly a role being played by the sun. Similar periods have occurred previously (for instance between 1987 and 1996). In the meantime, the rise of average temperature continues, which means that the heating as a result of greenhouse gases has not come to an end.

124. The heading 'Of what are we not certain?' includes the following statements:

- It is uncertain how much temperatures will increase in the future as a consequence of a further increase in the amount of CO_2 in the atmosphere. This is because the exact impact of clouds, particulates and water vapour are not known. According to a recent report of the PBL, a business as usual scenario will lead to heating between 2 and 6 degrees Celsius in the year 2100.

125. Under the heading 'What are the consequences of the greenhouse effect?', it is stated that:

- The exact consequences of climate change are difficult to predict. Some places will become warmer, while in other places it might become colder and wetter. It is clear that the natural equilibrium gets out of balance, which can cause successive crop failures, drinking water shortages and increased chances of floods. Water expands when it warms. In the last 100 years, the sea level has risen between 5 and 10 centimetres. Low-lying countries such as the Netherlands are naturally more vulnerable to such developments.

3.4.2. Findings from other Dutch sources

126. In 2007, the Ministry of Public Health, Well-being and Sport published the 'National Heat Plan' (**Exhibit 11**) (referred to in Chapter 1). In the report, the relationship between climate change, heat waves and the severe consequences for the most vulnerable members of society is described. The report shows that the heat waves of 2003 and 2006 caused negative health effects especially to the vulnerable groups within the Netherlands (the elderly, children, the poor and the chronically ill). Several serious consequences to general health were observed, ranging from reduced well-being, skin disorders, dehydration, respiratory and circulatory problems, to heat strokes and death.

127. In 2012, the Netherlands Court of Audit published the report 'Adaptation to Climate Change: Strategy and Policy' (**Exhibit 12**) (also referred to in chapter 1). The report points out that besides heat strokes, the Netherlands will also encounter an increasing amount of water-related problems such as flooding of coasts and rivers, excessive precipitation, water shortages, decreasing water quality, salinization, waterlogging and droughts. Other consequences that the Court of Audit maps out are the loss of biodiversity in the Netherlands and increased difficulty in protecting it, consequences for the agricultural industry, for general health (including increased incidence of infectious diseases, deterioration of air quality, increased exposure to UV and an increase of water-related and food-related diseases) and the consequences to the energy sector and industry (problems relating to water cooling, decreasing navigability of rivers and distribution network issues due to weather extremes).

128. The report of the Delta Commission (Veerman Commission) that was presented to the government in 2008 (**Exhibit 13**) indicates that the Netherlands needs to anticipate sea level rises of 0.65 to 1.30 meters in 2100 and 2 to 4 meters in 2200. The report also states that:

'The disastrous floods of 1953 are still etched into our collective memory; … Climate change is now forcing itself upon us – a new reality that cannot be ignored. … There is absolutely no reason for panic, but we must be concerned about the future. … The level of flood protection must be raised by at least a factor of 10 with respect to the present level. … Implementation of the recommendations is a matter of urgency. The Netherlands must accelerate its efforts … The current standards are out of date and must be raised, the climate is changing rapidly, the sea level is probably rising faster than has been assumed, and more extreme variations in river discharge are expected. The economic, societal and physical stakes in the Netherlands are great and are still growing; a breach in a dike has seriously disruptive consequences for the entire country. … For the Rhine and the Meuse, summer discharge will decrease and winter discharge will increase due to the temperature increase and changed precipitation patterns. ... A rising sea level, reduced river discharges in summer, salt water intrusion via the rivers and ground water all put pressure on the country's

drinking water supply, agriculture, shipping and those sectors of the economy that depend on water, for cooling or otherwise.'

3.5 Findings from the United States

129. In the United States, an intense legal battle has been waged on the question whether the federal Environmental Protection Agency (EPA) has the mandate to regulate emissions of CO_2. Initially, the EPA had taken the position that it did not have the authority to regulate CO_2 emissions. After a judgement of the United States Supreme Court, the EPA started the process of enacting regulations to control the emissions of CO_2. Before the EPA could establish actual regulation of CO_2 emissions, it first had to issue an 'endangerment finding', that is, a finding as to whether CO_2 posed a threat to human health and the environment. Partly because a number of States and industries were known to be against any regulation, the EPA provided extremely detailed reasoning for its decision to come to this finding in which it also referred to the findings of the IPCC. The 'Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act' was published by the EPA on 15 December 2009 (**Exhibit 14**). The decision was challenged before the United States Supreme Court, but without success.

130. According to the 'Endangerment Finding' of the EPA, the science of climate change has established that CO_2 and other greenhouse gases such as methane cause the climate to change in a way that harms the health of current and future generations. According to the EPA, the harm to general health happens as a consequence of deteriorating air quality, rising temperatures, increased weather extremes (storms, heat waves, droughts, forest fires and other fires, flooding), an increase of infectious diseases, sea-level rise, deterioration and loss of ecosystems and plant and wildlife, risks for forestry and drinking water supply, and risks to food security. In designating CO_2 as an 'air pollutant', the EPA took into account the consequences of climate change to areas outside of the United States, such as an increase in crop failures, since such occurrences will also have an impact in the United States and affect the health of American citizens due to the interconnectedness of world trade. The EPA found that all these effects of climate change are detrimental to the security, the well-being and the health of American society, and that these effects will only worsen over time.

131. By issuing the Endangerment Finding for CO_2, the EPA explicitly acknowledged and took into account the fact that the consequences of climate change taking place in other parts of the world eventually also effect the circumstances within their own boundaries.

3.6 Findings from the EU

132. The findings of the EPA regarding the consequences of climate change for American society, now and in the future, are very similar to those made by the European Commission regarding the consequences for EU citizens, as was made clear in the Green Paper of 29 June 2007 'Adapting to Climate Change in Europe: Options for EU Action' (**Exhibit 15**), and the White Paper of 1 April 2009 'Adapting to Climate Change: Towards a European Framework for Action' (**Exhibit 16**). The EPA findings are also very similar to those made by the Dutch Government, following an assessment made by the Dutch Environmental Assessment Agency, endorsed the findings made by the European Commission in the Green and White Papers (**Exhibit 17**). The seriousness of the consequences of climate change for Europe is made evident by the following findings from the Green Paper:

The effects of climate change in Europe and the Arctic are already significant and measurable. Climate change will heavily affect Europe's natural environment and nearly all sections of society and the economy. Rainfall and snowfall has significantly increased in northern Europe, whereas droughts are more frequently observed in southern Europe. Recent temperature extremes, such as the record-breaking 2003 summer heat wave, are consistent with man-made climate change. There is overwhelming evidence that almost all natural, biological and physical processes … are reacting to climatic changes in Europe and worldwide. The most vulnerable areas in Europe are: … coastal zones due to sea level rise combined with increased risks for storms; densely populated floodplains due to increased risks for storms, intense rainfall and flash floods leading to widespread damages to built-up areas and infrastructure.

….

Increase in frequency and intensity of extreme events such as storms, severe precipitation events, sea floods and flash floods, droughts, forest fires, landslides cause damage to buildings, transport and industrial infrastructure and consequently impact indirectly on financial services and insurance sectors. Even damage outside the EU could significantly affect its economy, e.g. reduced timber supply to European processing industries.

….

If there is no early policy response, the EU and its Member States may be forced into reactive unplanned adaptation, often abruptly as a response to increasingly frequent crises and disasters, which will prove much more costly and also threaten Europe's social and economic systems and its security. For impacts where we have enough confidence in the forecasts, adaptation must therefore start now.

….

Costly defence and relocation measures, e.g. increasing the height of dykes, relocating ports, industry and entire cities and villages from low-lying coastal areas and flood plains.

….
The frequency and intensity of major large-scale disasters such as fires, landslides, droughts, heat waves, floods or outbreaks of disease will increase. Disaster prevention, preparedness, response and recovery should become even more of a priority for Member States. Rapid response capacities to climate change would need to be accompanied by a strategy for disaster prevention and alert both at national and European level.
….
The poorer segments of society will be more vulnerable to the changes. Attention therefore needs to be paid to the social aspects of adaptation, including threats to employment and impact on living and housing conditions. For example, young children and elderly are more vulnerable to heat waves
….
Food production risks could become an issue in certain parts of Europe, as heat waves, droughts and pests are likely to increase the incidence of crop failures. As yield variability increases, the global food supply will be at increasing risk. … Climate change clearly has detrimental impacts on health through heat waves, natural disasters, air pollution and infectious vector-borne diseases … The European Commission recognises that such effects are rapidly and dangerously increasing.
Climate change will significantly affect economies and societies through its impacts on ecosystems, more specifically on natural capital, biodiversity and the flow of ecosystem services in terrestrial, freshwater and marine ecosystems.
Climate change and the effects it generates in terms of property damage, business interruption and forest fires presents a substantial financial risk for individuals, companies and the financial sector,
Impact analysis and good adaptation practices should be exchanged between industrialised regions facing similar problems, for example, in Japan, Southeast Australia, and Southwest US.
The need for adaptation could provoke significant restructuring in some economic sectors that are particularly weather dependent, e.g. agriculture, forestry, renewable energy, water, fisheries and tourism, or specifically exposed to climate change, e.g. ports, industrial infrastructure and urban settlements in coastal areas, floodplains and mountains.
All parts of Europe will increasingly feel the adverse effects of climate change.

3.7 Findings from other sources

133 The dangers of climate change are unequivocally accepted by (inter)national science, organisations, politics and courts. To illustrate this unequivocal acceptance, here is a selection of quotes:

<u>European Parliament (Resolution 2005/2049)</u>

'*whereas climate change is one of the major challenges of the 21st century, having significant negative global environmental, economic and social consequences with potentially catastrophic consequences, and whereas climate change is different to the other environmental problems we face.*'

European Commission (Commissions Communication: Limiting Global Climate Change to 2 Degrees Celsius, The Way Ahead for 2020 and Beyond, 10.1.2007, COM(2007) 2 final)
´Strong scientific evidence shows that urgent action to tackle climate change is imperative … A failure to act will have serious local and global security implications.´

Court of Justice of the European Union (PreussenElektra, 13 March 2001, Case C-379/98)
'It should be noted that [climate] policy is also designed to protect the health and life of humans, animals and plants.´

The United States Supreme Court (Massachusetts v. EPA, 2007)
'The harms associated with climate change are serious and well recognized … the risk of catastrophic harm, though remote, is nevertheless real.´

The Stern Report to the British Government
'Climate change is the greatest and widest-ranging market failure ever seen.´

Global Humanitarian Forum (Human Impact Report: Climate Change, 2009)
'The findings of the report indicate that every year climate change leaves over 300,000 people dead, 325 million people seriously affected, and economic losses of US$125 billion. Four billion people are vulnerable, and 500 million people are at extreme risk.´

UN Human Rights Council (Resolution 10/4, 2009)
'Noting that climate change related impacts have a range of implications, both direct and indirect, for the effective enjoyment of human rights including, inter alia, the right to life´

Cancun Agreements 2010 (1/CP.16)
'Recognizing that climate change represents an urgent and potentially irreversible threat to human societies and the planet, and thus requires to be urgently addressed by all the parties´

Chair of the International Monetary Fund (IMF), Christine Lagarde on 23 January 2013
'*We should make no mistake. Without concerted actions, the next generation will be roasted, toasted, fried and grilled.*' [18]

[18] This comment was made by Ms Lagarde at a meeting of the World Eonomic Forum in Davos. The full speech can be seen here: http://www.youtube.com/watch?v=YsuW-2iPSxg. At approximately 24:30 minutes into the recording, Ms Lagarde starts her comments on the challenges of climate change.

3.8 The World Bank sounds the alarm

134. Late in 2012, the World Bank published a report with the telling title: *"Turn down the heat; why a 4ºC warmer world must be avoided"*. The executive summary of this report is submitted as **Exhibit 18**. In the foreword to the summary, the president of the World Bank, Dr Jim Yong Kim writes:

> *"It is my hope that this report shocks us into action. Even for those of us already committed to fighting climate change, I hope it causes us to work with much more urgency.*
> *This report spells out what the world would be like if it warmed by 4ºC, which is what scientists are nearly unanimously predicting by the end of the century, without serious policy changes.*
> *The 4º scenarios are devastating: the inundation of coastal cities, increasing risks for food production potentially leading to higher malnutrition rates; many dry regions becoming drier, wet regions wetter; unprecedented heat waves in many regions, especially in the tropics; substantially acerbated water scarcity in many regions; increased frequency of high intensity tropical cyclones; and irreversible loss of biodiversity, including coral reef systems.*
> *And most importantly, a 4ºC world is so different from the current one that it comes with high uncertainty and new risks that threaten our ability to anticipate and plan for future adaptation needs."*

135. Urgenda c.s. specifically points out that the report clearly shows that a rapid rise in global temperature will cause such rapid changes in the climate and ecological systems that humanity will not be able, or will hardly be able, to adapt factually, socio-economically and financially. A rise in global temperature of 4 degrees Celsius within the timeframe of one century has, as far as science has been able to determine, never happened in the last 50 million years on earth (see the Frequently Asked Questions 6.2, **Exhibit 19**). This is a good moment to recall the fact that humanity has only been able to truly develop itself in the past 10,000 years and that this development has taken place in a very stable climate in which the global average temperature barely changed until the start of the twentieth century.

3.9 The International Energy Agency sounds the alarm

136. The International Energy Agency (IEA) was founded in 1974 by a number of countries in reaction to the oil crisis of that period. Its primary mission was and still is twofold: to ensure the supply of energy of its member states by coordinating policies and promoting rational energy policies in a global context, and conducting authoritative research and analysis for the purpose of ensuring reliable, affordable and clean energy. In contrast to the IPCC, which strictly confines itself to gathering knowledge regarding the climate and predicting possible future scenarios, the IEA has a strong policy focus. The IEA publishes an annual report called the ´World Energy Outlook´ in which its sets out trends and developments in energy. The Netherlands, the United States, the United Kingdom, Spain, Norway, Germany, Denmark and Australia are among its members.

137. The energy sector is responsible for a large share of global CO_2 emissions and is therefore an important driver behind climate change. For this reason, climate change now lies at the core of IEA's policy agenda.

138. The IEA has developed a number of scenarios that recur in its annual reports, three of which are the 450 Scenario, the New Policies Scenario, and the Current Policies Scenario.

139. In the context of the 450 Scenario, assessments are made of the actions needed to stay below the limit of 450 ppm CO_2 concentration in the atmosphere, which would lead to a 50% chance of not going over 2 degrees global warming and thus preventing dangerous climate change. The New Policy Scenario takes into account existing policies as well as planned policies and describes the level of emissions that corresponds to an increase in global average temperature of 3.6 to 5.3 degrees Celsius. The Current Policies Scenario describes the situation in which government policies and actions will not change compared to the policies that have been executed up until the publication of the report. This scenario, which is based on all available data until the middle of 2011, predicts a rise in global average temperature of 6 degrees Celsius.

140. The IEA report ´Redrawing the Energy-Climate Map´ builds on the annual reports of the IEA. The message of this report is alarming in many aspects and creates a sense of urgency for the reason that it stresses the importance of the 2020 targets. The full report is available at: http://www.iea.org/publications/freepublications/publication/name,38764,en.html. The Executive Summary and Chapter 1 of the report are submitted as **Exhibit 20**. Several sections from the summary and first chapter are displayed below. Urgenda c.s. suggests the court read the full texts, as they are highly relevant to these proceedings.

'The world is not on track to meet the target agreed by governments to limit the long-term rise in the average global temperature to 2 degrees Celsius (ºC). Global greenhouse-gas emissions are increasing rapidly and, in May 2013, carbon-dioxide (CO_2) levels in the atmosphere exceeded 400 parts per million for the first time in several hundred millennia. The weight of scientific analysis tells us that our climate is already changing and that we should expect extreme weather events (such as storms, floods and heat waves) to become more frequent and intense, as well as increasing global temperatures and rising sea levels. Policies that have been implemented, or are now being pursued, suggest that the long-term average temperature increase is more likely to be between 3.6ºC and 5.3ºC (compared with pre-industrial levels), with most of the increase occurring this century … To keep open a realistic chance of meeting the 2ºC target, intensive action is required before 2020, the date by which a new international climate agreement is due to come into force.´

141. As is pointed out by the IEA, for the first time in several hundreds of thousands of years, the level of 400 ppm CO_2 in the atmosphere has been exceeded. The IEA moreover points out that current policies will not prevent considerably higher heating and that intensive reductions before 2020 are necessary to have a realistic chance not to avoid extreme heating.

142. The IEA also calculated that reductions after 2020 will be 4 times more expensive compared to reductions that take place before 2020. In the 2011 World Energy Outlook, the IEA stated that:

'Delaying action is a false economy: for every $1 of investment avoided in the power sector before 2020, an additional $4.3 would need to be spent after 2020 to compensate for the increased emissions.'

In the report 'Redrawing the Energy-Climate Map', the IEA again confirms this:

'Delaying stronger climate action to 2020 would come at a cost: $1.5 trillion in low-carbon investments are avoided before 2020, but $5 trillion in additional investments would be required thereafter to get back on track. Delaying further action, even to the end of the current decade, would therefore result in substantial additional costs in the energy sector and increase the risk that the use of energy assets is halted before the end of their economic life.'

143. After this, the IEA points out that new insights indicate that the 2-degree and 450-ppm boundary might already be too lax and when maintained could lead to catastrophic consequences.

'There is broad international acceptance that stabilizing the atmospheric concentration of greenhouse gases at below 450 parts per million (ppm) of carbon-dioxide equivalent (CO2-eq) is consistent with a near 50% chance of achieving the 2ºC target, and that this would help avoid the worst impacts of climate change. Some analyses finds, however, that the risks previously believed to be associated with an increase of around 4ºC in global temperatures are now associated with a rise of a little over 2ºC, while the risks previously associated with 2ºC are now thought to occur with only a 1ºC rise.'

144. The IEA then repeats the urgency and importance of achieving results before 2020:

'Global greenhouse-gas emissions continue to increase at a rapid pace. The 450 ppm threshold is drawing ever closer … Achieving the target will require determined political commitment to fundamental change in our approach to producing and consuming energy … It shows that, to stay on an economically feasible pathway, the rise in emissions from the energy sector needs to be halted and reversed by 2020.'

The IEA then explains that because emissions are still growing, the remaining carbon budget will be used up within 20 years:

'*It is the cumulative build-up of greenhouse gases, including CO_2, in the atmosphere that counts, because of the long lifetime of some of those gases in the atmosphere. Analysis has shown that, in order to have a 50% probability of keeping global warming to no more than 2ºC, total emissions from fossil fuels and land-use change in the first half of the century need to be kept below 1440 Gt. Of this "carbon budget", 420 Gt CO_2 has already been emitted between 2000 and 2011 and the World Energy Outlook 2012 (WEO-2012) estimated that another 136 Gt CO_2 will be emitted from non-energy related sources in the period up to 2050. This means that the energy sector can emit a maximum of 884 Gt CO_2 by 2050 without exceeding its residual budget. When mapping potential emissions trajectories against such a carbon budget, it becomes clear that the longer action to reduce global emissions is delayed, the more rapid reductions will need to be in the future to compensate. Continuing on today's path, even with the assumed implementation of new policies, would lead to damaging climate change*.'

145. Urgenda c.s. is of the opinion that the reports such as those published by the World Bank clearly show that an unsustainable situation has been created that has made drastic reductions before 2020 are necessary in order not to breach the 2-degree boundary and thus prevent dangerous climate change.

146. In addition to the IEA reports, Urgenda c.s. submits a report from the international accountancy firm PwC (PricewaterhouseCoopers), titled 'Too late for two degrees? Low Carbon Economy Index 2012' (**Exhibit 21**). In this report, PwC maintains that reduction efforts have to be increased by a factor of 6 in order to avoid the 2-degree threshold.

3.10 Conclusion with regard to the facts

147. In the foregoing, Urgenda c.s. has convincingly proven that far-reaching emissions reductions before 2020 are necessary and that the world at present is far from staying within the 2-degree boundary. Based on current policies, the world is heading towards 4 degree or more of global heating in 2100 and a further increase after this.

Urgenda c.s. wants to prevent this and are of the opinion that the Dutch State has the legal and individual responsibility to provide emissions reductions within its own borders to the extent that can be demanded from each of the industrialised countries. The legal basis for this claim will be further articulated in the following chapters.

4. The applicable law

4.1 Introduction

148. Urgenda c.s. base their claim on Dutch national law as well as on international law.

149. International law is directly applicable in the Dutch legal system (see Article 79 of the Statute on the Organisation of Courts; and judgement of the Dutch Supreme Court of 3 March 1919, NJ 1919, p. 317, Grenstractaat). The Dutch Constitution determines that only provisions of Treaties and of Resolutions by international institutions that may be binding on all persons by virtue of their contents can be relied upon in court.

150. In principle therefore, individuals can only base their case on provisions that are 'binding on all persons by virtue of their contents' when filing a lawsuit against the Dutch State. Articles 2 and 8 of the ECHR are such provisions, upon which Urgenda c.s. rely in the current proceedings. The behaviour of the State will be tested against these provisions.

151. In addition to this, in the Dutch legal system, the principle of indicative effect also applies (or in German *'indizwirkung';* a term that is also sometimes used is '*reflective effect*'). Indicative effect refers to the use by judges and administrative authorities of international law as an interpretive source when applying national norms such as rules of unwritten law pertaining to proper social conduct, principles of reasonableness and fairness, the public interest, or other legal principles. The application of the 'indicative effect' is based on the idea that treaties carry the approval of the legislative authority (in the Netherlands, the States General), following which the treaties form part of the Dutch legal order and should therefore serve as authoritative interpretation of other norms in that legal order.

152. The possibility of using the indicative effect of treaty provisions is a generally accepted principle in Dutch case law. See for example Supreme Court case of 15 April 1994, NJ 1994, 608 (Valkenhorst) point 3.2; Supreme Court case of 8 April 1994, NJ 1994, 704 (AGFA / Schoolderman) point 3.5 as well as point 13 of the conclusion of Advocate General Koopmans; Supreme Court case of 30 January 2004, NJ 2008, 536

(KLC / Vliegers) point 3.3; Supreme Court case of 11 June 1993, AB 1994, 10 (Roosendaal method, as well as the comment to the judgement).[19]

153. On the basis of the principle of indicative effect, individuals can therefore rely upon provisions of treaties and decisions of international organisations, even when these provisions and decisions are not '*binding on all persons by virtue of their contents'.* Reliance can therefore be placed on principles of tort law, such as the general duty of care, and a claimant may subsequently request a court to interpret the principles in line with the treaty norms.

154. Urgenda c.s. are of the position that the State can be held liable for the volume of Dutch CO_2 emissions on the basis of general principles of international law as well as treaties and decisions of international organisations to which the State has committed itself. Urgenda c.s. base their claim on these international law provisions, both directly and indirectly, through general principles of tort such as rules of unwritten law pertaining to proper social conduct. The liability of the State can moreover be based on purely national legal principles. The principles to which Urgenda c.s. appeal are apparently of such universal character that they appear in almost all legal spheres, both national and international.

155. In the following, Urgenda c.s. first discuss the international law principles upon which they base their claim, followed by a discussion of the national law principles that equally serve as the basis for their claim.

4.2 General principles of international law

4.2.1 Introduction

156. A subject of international law (such as a state) that violates a legal norm to which it is subject can be held liable on the basis of international law. International law also connects sanctions to the violation of such norms.

157. In general, international law is directed only at states, not at other parties. Norms and principles of international law can therefore only be called upon against states.

158. The principle of state liability under international law is mainly grounded in principles of customary law. In the context of interstate claims, some of these principles have been codified in 2001 in the 'Draft Articles on Responsibility of States for Internationally Wrongful Acts' of the International Law Commission (hereafter ILC) of

[19] Other examples of indicative effect that are mentioned in the literature are the judgement of the Council of State of 22 April 1991 AB 1991, 592 and judgement of the Council of State of 30 December 1993, AB 1995, 24; also the judgement of the district court of Rotterdam of 27 June 2000, JB 2000/240 and the Royal Decision of 19 February 1993, AB 1993, 385 (Eems-Dollard Treaty).

the United Nations. The fact that the Articles on State Responsibility formally only apply to interstate claims does not mean that they cannot be used as indications as to the content of principles of international law in the larger sense. To the contrary, the ethical norms in the Articles that describe the international consensus on what states can and cannot do may very well be used outside of interstate claims. In the context of these proceedings, article 33 sub 2 of the Articles on State Responsibility are important. Here it is determined that the principles in the Articles are '*without prejudice to any right, arising from the international responsibility of a State, which may accrue directly to any person or entity other than a State'*. Thus, liability of one state against another state for damage done as a consequence of CO_2 emissions does not prevent individuals from also holding the state liable for those emissions. In the case of private individuals, the acts of the state will also have to be judged on the basis of general principles of general international law.[20] As was mentioned before, in the Netherlands, general principles of international law are part of the Dutch legal order.

159. In order to establish state liability, there has to be a violation (through an act or omission) of an international legal duty that rests on the particular state and that violation must be attributable to that state.

4.2.2. The 'no harm' principle

160. The first question to be answered therefore is whether such an international legal duty exists regarding transboundary emissions. This question must be answered in the affirmative.

161. It is a general principle of international law that liability exists for transboundary pollution. This principle is known as the 'no harm' principle. In principle, a state has the sovereign right to use and exploit all resources on its territory, even when this damages the environment. The ´right to pollute´ is however not without boundaries. These boundaries follow from the principle that no state has the right to use (or have used) the resources on its territory in a way that causes damages to other states.[21] The principle does not prohibit every transboundary damage; the damage needs to be 'significant'.[22]

162. In the context of environmental law, the 'no harm' principle was first applied in the Trail Smelter Case of 1941. This case involved transboundary pollution by air. In this

[20] See e.g. P.A. Nollkaemper, NKB 2007, p. 2875.

[21] Island of Palma case, (1928), II UNRIAA 829, at 839: 'Territorial sovereignty, as has already been said, involves the exclusive right to display the activities of a State. This right has as corollary a duty: the obligation to protect within the territory the rights of other States.'

[22] The Dutch Supreme Court in the Potash mines case also formulate a threshold: pollution could not be 'unduly'. The same criteria was also use in the Voortse Stroom case.

case, Canada was held responsible for emissions from Canadian territory, even though the Canadian government was not itself the cause of the emissions. The tribunal in that case decided that:

'Under the principles of international law ... no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the property of others therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.'

163. The decision in the Trail Smelter Case was in line with previous judgements of U.S. courts that concerned conflicts between U.S. states (Milwaukee I) involving transboundary 'nuisance claims'.

164. The 'no harm' principle was picked up more widely shortly after the Trail Smelter case. Principle 21 of the 1972 Stockholm Declaration[23] states :

'States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.'

165. The General Assembly of the United Nations has endorsed this principle as being the basic rule in cases of state liability.[24] The rule has been confirmed and expanded upon in a number of treaties such as Principle 2 of the Rio Declaration on the Environment and Development.

166. Especially important for the purposes of the current proceedings is the mention in recital 8 of the preamble of the UNFCCC of the no harm principle as one of the foundations of the obligation of the parties to the UNFCCC to lower their emissions of greenhouse gases. This point will be further elaborated below.

167. These events have elevated the no harm principle to customary international law.

168. It should be noted that the UNFCCC (which will be discussed in more detail below) was not established as a *lex specialis* that supersedes the the more general principles of liability under international law, which includes the no harm principle. This is also true of the Kyoto Protocol.[25] Both treaties do contain procedures to ensure

[23] Stockholm Declaration, 16 June 1972, UN Doc A/Conf. 48/14.

[24] International Responsibility of States in Regard to the Environment, UNGA Res 2996 (XXVII), UN Doc A/8001 (1972). No state voted against the resolution.

[25] See C. A. Okkerse, 'Volkenrechtelijke aansprakelijkheid voor schadelijke effecten van zeespiegelstijging als gevolg van klimaatverandering', in Naar aanspakelijkheid voor (de gevolgen van) klimaatverandering ('Civil

compliance with their requirements. They do not however contain rules that aim at regulating or restricting the 'normal' international law of liability. The general international law obligations that exist on the basis of the no harm principle therefore exist alongside these treaties.

169. As a consequence of the above, state liability towards private individuals is not excluded by the circumstance in which a state complies with its obligations under the Kyoto Protocol. The emission reduction obligations under the Kyoto Protocol are merely minimum requirements that will not be able to prevent climate change and are only applicable to the states that are party to this protocol. They therefore do not influence the '*erga omnes*' general liability based on the no harm principle.

170. The no harm principle establishes the undisputable legal obligation under international law to prevent significant damage from emissions from one's own territory to the environment and habitat of other states and their inhabitants. This legal obligation encompasses the duty to take effective and proportionate measures. Such effective measures may include the enactment of environmental legislation that prevents the violation of the rights of third countries by enterprises and private individuals operating from one's own territory. To comply with the requirement of proportionality, the latest scientific developments must be taken into account. Other relevant factors are the emission developments per capita, past emissions, and the technical and economic capabilities of the state to reduce its emissions.

171. These three factors are also the factors that are used in the UNFCCC to differentiate between the responsibilities and obligations of the parties to the treaty. Countries that have large per capita emissions, that have a long history of emissions and that are relatively prosperous have the largest reduction obligation and need to start reducing the earliest. The UNFCCC is therefore founded on generally accepted principles of international law.

172. The next question that needs to be answered is whether the no harm principle can also lead to liability of the state for 'significant' damage that is caused from its territory when that damage is not caused by its own actions but by those of private individuals or of enterprises.

173. The wording of the no harm principle leaves little room for doubt that this is indeed the case. The International Criminal Court also decided accordingly in the Corfu Channel case.[26] In the present proceedings, claimants do not assert that the State itself is emitting large amounts of CO_2, but rather that it is negligent in performing its general duty of care to take the necessary measures that prevent 'significant' harm

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liability for damaging effects of sea level rise as a result of climate change', in Toward Liability for the Consequences of Climate Change), Vereniging voor Milieurecht (VMR) 2012-1, p. 20.

[26] United Kingdom vs Albania, Mertis ICJ Reports 1949, p. 22-23.

from being done as a consequence of emissions that derive from its own territory.[27] Put differently, the no harm principle encompasses the positive obligation of a state to take the measures that are necessary to prevent significant damage from being done from its territory. As will be discussed below, the no-harm principle is no different in its application than the application of articles 2 and 8 of the ECHR. These provisions also encompass the positive obligation to prevent damage as defined in those articles.

174. In the context of international law, issues of causality also play a role. Article 47 of the Articles on State Responsibility offers (at least for cases of damage in climate cases) no support for the principle of joint and several liability, in which each state can be held liable for the total damage while maintaining the possibility of redress from all other states. For this reason, the liability of the state needs to be limited to its proportionate contribution to climate change. The starting point is that the legal status of a state has to be determined on an individual basis, based on its own behaviour and individual legal obligations. In the case of liability of the Dutch State for global climate, it is therefore important to consider to what extent the State has contributed to that climate change and whether that contribution is unlawful.[28] In other words, in the context of these proceedings, the application of the no harm principle results in a pro rata liability of the State for its share in the total CO_2 concentration in the atmosphere. Further on in this summons, it will be explained that this is precisely the reasoning to which the several judges came in the proceedings regarding the Potash Mines. The Potash Mines judgement is thus an example of the indicative effect (*indizwirkung*): the international no harm principle is being used by a Dutch court to interpret and give context to nationally applicable 'open' norms such as rules of unwritten law pertaining to proper social conduct, in cases of transboundary (unlawful) nuisance or endangerment.

175. After the discussion of the no harm principle in relation to transboundary pollution, Urgenda c.s. will discuss how this principle is elaborated in the UNFCCC regarding the emissions of greenhouse gases.

4.3 The UN treaties

4.3.1 The UN Framework Convention on Climate Change

176. The UN Climate Framework Convention on Climate Change (UNFCCC) that was concluded in 1992 (**Exhibit 22**) serves as the framework for further decisions by the signatory parties. The UNFCCC aims to have states limit greenhouse gas emissions

[27] See also P.A. Nollkaemper, Kern van het internationaal publiekrecht, 2011, p. 395.

[28] See also P.A. Nollkaemper, NJB 2007, p. 2878.

from their territory, with a view to preventing dangerous climate change. The UNFCCC goes one step further than the international public law principle of 'no harm' that rests on states.

177. Because Urgenda c.s. in their proceedings against the State, in essence, build upon the principles and commitments of the UNFCCC, the Convention will be discussed at length.

178. In the preamble of the UNFCCC, signatory parties have agreed to, inter alia, the following:

'Acknowledging that change in the Earth's climate and its adverse effects are a common concern of humankind,

Concerned that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, … and may adversely affect natural ecosystems and humankind,

Noting that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are relatively low …

…

Acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions,

…

Recalling also that States have in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and their responsibilities to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction,

…

Recalling the provisions of General Assembly Resolution 44/228 of 22 December 1989 on the United Nations conference on environment and development, and Resolutions

43/53 of 6 December 1988, 44/207 of 22 December 1989, 45/212 of 21 December 1990 and 46/169 of 19 December 1991 on protection of global climate for present and future generations of mankind.' (Emphasis added)

179. With these considerations, the states that are parties to the UNFCCC agreed among themselves on a number of starting points, as a basis for the obligations to which they have subsequently agreed among themselves.

180. The first two recitals cited by Urgenda c.s. make it clear that the UNFCCC seeks to protect the ecosystems of the planet and humanity. The UNFCCC thus seeks to protect Urgenda c.s. and – especially in the case of Urgenda – the interests for which they stand.

181. Urgenda c.s. point out that in the third recital quoted, two measures are used to compare the developed and developing countries with each other: first, the degree of 'responsibility' for the climate change problem (i.e. the historical and current emissions of the developed countries), and second, the measure of 'per capita' emissions (i.e. emissions per person of a population). These two measures are used as a prelude and basis for the principle agreed upon (quoted in the fourth recital above), that developed and developing countries have 'common but differentiated responsibilities' in combating climate change. A comparison of the reduction effort required from different countries should therefore, according to the UNFCCC, be based upon 'per capita emissions' and historical responsibility.

182. Urgenda c.s. point out, moreover, that in the fifth recital quoted, there is a reference to the general – and previously discussed –international law principle of 'no harm'. It follows from this recital that the obligations in the UNFCCC to reduce greenhouse gas emissions builds upon and are an elaboration of this general principle of international law.

183. The last recital quoted by Urgenda c.s. is a reference to the principle of 'sustainable development' as defined in the Brundtland Report, and this makes clear (again) that the UNFCCC seeks to protect both current and future generations of humankind.

184. The considerations and principles that are the foundation of the UNFCCC are emphatically quoted and explained by Urgenda c.s., because they are the same considerations and principles that underlie their claims.

185. These (and other) considerations from the preamble of the UNFCCC inform Article 2 of the Convention, in which the State Parties lay down the ultimate objective of the Convention, namely '*to achieve ... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference*

with the climate system', and that this level should be achieved within a time frame '*sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner*' (emphasis added).

186. The objective laid down in Article 2 is to be achieved according to a number of principles.

187. For example, Article 3 paragraph 1 of the UNFCCC states that State Parties must protect the climate system 'for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.'

188. In that respect, both the prevention principle and the precautionary principle are laid down in Article 3 paragraph 3 of the UNFCCC.
The prevention principle calls for avoiding climate change and its adverse effects as much as much as possible: '*the parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects*'.
The precautionary principle entails that the lack of full scientific certainty should not be used as a reason to delay taking such measures as are prescribed by the prevention principle:
'where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost effective so as to ensure global benefits at the lowest possible costs.'

189. The UNFCCC specifies obligations generally for all Parties to the Convention, such as the obligation for each country to set up national inventories of anthropogenic emissions.
In addition to these general obligations, Article 4 paragraph 2 contains special obligations for the developed countries, i.e. the Parties listed in Annex I to the UNFCCC. These are known as the Annex I countries. The Netherlands belongs to this group of countries.

190. In Article 4, subparagraph 2(a) of the UNFCCC, Annex I countries have committed themselves, for instance, to develop and 'adopt national policies' and to take corresponding measures to limit climate change by limiting their greenhouse gas emissions. The policies and measures must demonstrate that developed countries are 'taking the lead' to reverse the long-term trends in anthropogenic emissions, in a

manner that is consistent with the objective of the UNFCCC, while recognizing that the return to earlier levels of anthropogenic emissions (to the levels of the year 2000) will contribute to that reversal.

191. The underlining in this and the preceding two paragraphs is intended to draw attention to the fact that the UNFCCC calls for national obligations, and hence that countries are individually responsible for achieving the objective of Article 2 of the UNFCCC, and also that developed countries such as the Netherlands should take the lead in this. When discussing the defence of the State we will come back to this.

192. In Article 4, subparagraph 2(b) of the UNFCCC, the Annex I countries have committed themselves to regularly reporting and providing information on the policies developed and measures taken up until the year 2000, '*with the aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases'* (emphasis added). It follows that an individual obligation rests on countries to reduce emissions, which is clarified in Article 3 paragraph 3 of the Convention as follows: '*Efforts to address climate change may be carried out cooperatively by interested Parties*' (emphasis added). Cooperation is therefore not the premise, but rather an option that countries can take to fulfil their (individual) obligations. The UNFCCC thereby perpetuates an individual obligation entered into by each country, and this individual obligation only terminates when the individual obligation is fulfilled through cooperation.

193. Article 7 of the UNFCCC establishes the Conference of the Parties (COP), the body established under the Convention that will oversee its implementation and whether the measures taken are sufficient to achieve the objective of Article 2, and will – within its mandate – make necessary decisions. The decisions of the Conference of the Parties are therefore 'decisions of a public international organisation' that are directly applicable in the Dutch legal order. In principle, the Conference of the Parties should be held once a year.

4.3.2 The Kyoto Protocol

194. In 1995, only three years after the Convention was signed, the first Conference of Parties (Decision 1/CP.1) had already concluded that the objectives of Article 4 paragraph 2 sub (a) and (b) of the UNFCCC would not be adequate to achieve the goal set in Article 2 of the Convention, and that the goal should be strengthened and supplemented by individual quantitative targets of the Annex I countries.

195. The Kyoto Protocol, which was realized with great difficulty, provided for this: a common quantitative target of the Annex I countries was set – the reduction of

anthropogenic greenhouse gas emissions to a maximum of 95% of the level of 1990, and in addition, quantitative targets for each Annex I country established.

The Kyoto Protocol also defined a number of mechanisms in order to reach the reduction targets contained therein. These mechanisms have been criticized as they, for example, make it possible for the national reduction commitments to be achieved by realizing reductions in other countries; in other words, a country may buy the 'emission space' of other countries so that little or no emission reductions of its own have to take place. The Kyoto Protocol was in effect until 2012, and it contains no reduction commitments for subsequent years thereafter.

196. The joint reduction target of the Annex I countries established in the Kyoto Protocol is likely to be achieved. The main reason for this is the economic downturn in Eastern Europe after the end of the Cold War and the disintegration of the Soviet Union. In 2006, the level of emissions of the Eastern European countries was even less than 63% from 1990 levels, while emissions of other industrialised countries actually increased by almost 2% compared to 1990 levels. The drop in the CO_2 emissions in Eastern European countries has meant that a lot of emission space (i.e. emission allowances) remained unused.

197. One of the mechanisms by which countries can meet their individual reduction commitments under the Kyoto Protocol is the previously mentioned 'buying' of emission space elsewhere. In reality, this mechanism means that, as a result of the economic decline in Eastern Europe, the real achieved emission reductions have been partly cancelled out because the Annex I countries, such as the Netherlands, have bought this extra 'emission space' and therefore have been able to continue releasing emissions above their allocated 'emission budgets'. Environmental benefits from elsewhere are essentially bought to 'pay off' one's own environmental failure – a form of equalization. The system thus encourages not the realisation of maximum CO_2 reductions, but rather the maximum 'filling in' and use of the beforehand determined (and generously allocated) emission budgets. The State has purchased foreign emission reductions so that Dutch industry has not had to reduce its greenhouse gas emissions as much as it otherwise would have had to. Complying with the Kyoto Protocol has thus, also for the Netherlands, become an accounting and administrative obligation, not an obligation to actually reduce its own emissions from its own territory.

198. Apart from this criticism, the achievement of the goals of the Kyoto Protocol also was not, and is not, enough to stop anthropogenic global warming; the reduction commitments agreed to are (much) too small and the allocated emission budgets too generous. New binding commitments for the period after 2012, as a successor to the Kyoto Protocol, have not yet been established and are not expected in the short

term.

199. The absence of binding agreements within the framework of the UNFCCC on future reduction commitments of individual countries does not mean that the need for substantial reductions has not already been explicitly recognized by the Parties to the Convention.

4.3.3 Bali Action Plan

200. At the COP13 in 2007, the so-called Bali Action Plan was adopted (Decision 1/CP.13) (**Exhibit 23**). It is a 'decision of an international organization' that has direct effect in the Dutch legal system. The preamble of this decision states *inter alia*:

'*Responding to the findings of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change that warming of the climate system is unequivocal, and that delay in reducing emissions significantly constrains opportunities to achieve lower stabilization levels and increases the risk of more severe climate change impacts,*

Recognizing that deep cuts in global emissions will be required to achieve the ultimate objective of the Convention and emphasizing the urgency to address climate change as is indicated in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.' (emphasis added)

201. In the last paragraph quoted above from Decision 1/CP.13, the word 'urgency' has a footnote. That footnote refers – in a statement at the bottom of the same page – to the report of Working Group III of AR4 of the IPCC, and specifically to the Technical Summary, pp. 39 and 90, and to the table in Chapter 13, p. 776. In these documents from the IPCC, a scientific foundation is laid down that with a global increase of 2 degrees Celsius, 'dangerous' climate change will exist, and to avoid this, the amount of greenhouse gases in the atmosphere must not exceed the limit of 450 ppm.[29] It is also established that the industrialized (Annex I) countries should realize an emission reduction of 25 to 40% by the year 2020, as compared to the base year of 1990. In this case, according to the IPCC, there is a 50% probability that it will be possible to stay within the 2-degree increase. To maintain that probability, emission reductions from these countries should be increased to 80 to 95% in 2050, according to the

[29] When defining the 450 ppm boundary, the Bali Action Plan includes all greenhouse gases, which is commonly indicated as 450 ppm CO_2-eq. By way of explanation: the combined effect of CO_2 taken together with other greenhouse gases is referred to as 'CO_2-eq', or CO_2-equivalent. In these cases, the greenhouse effect of for instance methane gas is converted into CO_2 values. Because the 450 ppm-eq boundary thus also includes the concentrations of other gases, the real cumulative boundary for CO_2 lies below this value. The fact that 450 ppm and 450 ppm-eq are nonetheless used alongside each other in the scientific literature relates to the possibility of a temporary 50 ppm overshoot. This overshoot is referred to in note b of the table in chapter 13 mentioned here. The science behind the temporary overshoot will be elaborated further down in this summons.

documents of the IPCC that are referred to in the Bali Action Plan.

202. Decision 1/CP.13 must therefore be understood as the Parties to the UNFCCC having agreed to recognize that specified 'deep cuts' in emissions are needed, and that these are 'urgent', whereby the 'urgency' is based upon the referenced passages from AR4 of the IPCC.
Urgenda c.s. refer emphatically to this source, because – as will be seen later – their own reduction claim against the State is based on the same passages from AR4.

203. Because Urgenda c.s. base their appeal on those passages in the IPCC's AR4, it must be pointed out that prior to the Bali Action Plan, the Netherlands and other EU countries were already acutely aware of the need to achieve 25-40% reductions before 2020. At the Bali Conference, they therefore called for the 450-ppm scenario and the corresponding emission reductions to take place before 2020. On January 10, 2007 (i.e. prior to the Bali Action Plan), the EU Commission had already submitted the document `Limiting Global Climate Change to 2 Degrees Celsius: The Way Ahead for 2020 and Beyond' (**Exhibit 24**) to the Council, in which it is stated that an emission reduction target of 25-40% is needed before 2020 to have a 50% chance of reaching the 2-degree objective: `The EU's objective is to limit global average temperature increase to less than 2°C compared to pre-industrial levels … By stabilising long-term concentrations at around 450 ppmv[30] CO_2-eq., there is a 50% chance of doing so.´

204. After the EU and the Netherlands had advocated the need for these reductions in Bali and these were included in the Bali Action Plan, the European Parliament stated on January 31, 2008 in its resolution of that date (**Exhibit 25**): ´*The European Parliament [welcomes] the recognition of the Parties to the Kyoto Protocol that reductions of GHG emissions in the range of 25-40 % compared to 1990 by industrialised countries as a group are required by 2020.'*

205. As for the Netherlands: in the letter of April 29, 2008 (see **Exhibit 26**), the then Minister of Environment and Minister of International Development informed the Parliament that the Netherlands recognized the necessary reduction targets of 25-40% by 2020. In the same period, the Dutch government set itself the goal to achieve a 30% reduction in 2020.

206. On October 12, 2009 (**Exhibit 27**), prior to the COP15 in Copenhagen (to be discussed below), the Cabinet advised the Parliament, stressing the importance of the 2020 objectives, as follows: '*The total amount of emission reductions that developed countries have offered so far remains insufficient to achieve the 25-40% reduction in 2020, which is necessary to stay within a credible trajectory to keep the 2-degree*

[30] See previous footnote.

objective within reach.'

4.3.4 Copenhagen Accord

207. At the COP15, held in Copenhagen in 2009, an attempt was made by the Parties to agree on a new agreement that would serve as a successor to the Kyoto Protocol for the period beyond 2012. Parties could not, however, reach agreement. Some countries did not want to resign themselves to this outcome, and these countries agreed to the Copenhagen Accord. The Copenhagen Accord is thus an agreement that admittedly has been established in the shadow of the UNFCCC, but also outside the framework of the UNFCCC. It therefore does not have treaty status (it is not a 'decision of an international organization'), unlike, for example, the aforementioned Bali Action Plan. In Decision 2/CP.15 (**Exhibit 28**), the Conference of Parties decided to 'take note' of the Copenhagen Accord. The Netherlands is a party to the Copenhagen Accord.

208. For the current proceedings, it is significant that in the Copenhagen Accord the participating parties agreed to recognize officially and collectively that to achieve the objective of Article 2 of the UNFCCC (i.e. preventing a 'dangerous' anthropogenic climate change), according to scientific findings, the global average temperature increase should stay below 2 degrees Celsius, and that the parties thereto, individually or jointly, should establish reduction targets for the year 2020.

209. In 2010, after COP15 in Copenhagen and prior to COP16 in Cancun, the European Commission stated that the EU's target of 20% reduction in 2020 that had been set: *´is not enough to deliver the goal of keeping global temperature increase below 2°C compared to pre-industrial levels. All countries will need to make an additional effort´* (see Communication of 26.5.2010 from the EU Commission to the EU Parliament, **Exhibit 29**). The Communication is consistent with an earlier opinion from 2009 of the European Economic and Social Committee (EESC) – a committee that by virtue of Article 192 TFEU has an advisory role to the European Parliament and the Council. The EESC also concluded that the 20% target for 2020 of the EU was insufficient in light of what was agreed in the Bali Action Plan: *'In this context it has to be stated that the EU target of a 20% reduction in GHG emissions by 2020 compared to 1990 levels … is lower than the 25-40% reduction range for industrialised nations which was supported by the EU at the Bali Climate Change Conference in December 2007… The EESC concludes that accumulating evidence on climate change demands the re-setting of targets to achieve greater GHG emission reductions´* (**Exhibit 30**).

4.3.5 Cancun Agreement and thereafter

210. At the COP16 held in Cancun in 2010, the States Parties then agreed in Decision 1/CP.16 (**Exhibit 31**):

'Recalling its decision 1/CP.13 (the Bali Action Plan) and decision 1/CP.15

…

Noting resolution 10/4 of the United Nations Human Rights Council on human rights and climate change, which recognizes that the adverse effects of climate change have a range of direct and indirect implications for the effective enjoyment of human rights and that the effects of climate change will be felt most acutely by those segments of the population that are already vulnerable owing to geography, gender, age, indigenous or minority status, or disability,

…

4. Further recognizes that deep cuts in global greenhouse gas emissions are required according to science, and as documented in the Fourth Assessment Report of the Inter- governmental Panel on Climate Change, with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2 °C above pre- industrial levels, and that Parties should take urgent action to meet this long-term goal, consistent with science and on the basis of equity; also recognizes the need to consider, in the context of the first review, as referred to in paragraph 138 below, strengthening the long-term global goal on the basis of the best available scientific knowledge, including in relation to a global average temperature rise of 1.5 °C'

211. In summary: referring to the Bali Action Plan, the States Parties jointly agreed in Decision 1/CP.16 to:
    a. Establish that climate change can infringe upon human rights, especially those of vulnerable groups;
    b. Recognize that strong reductions in greenhouse gas emissions are necessary to, as documented in AR4, keep global warming below 2 degrees Celsius;
    c. Recognize that the Parties to the Convention urgently must come to action to reach that long-term goal (with reference to the Bali Action Plan); and
    d. Collectively recognize that it is necessary to take into consideration a maximum warming of 1.5 degrees as the ultimate objective of Article 2 of the Convention.

212. The Cancun Agreement in fact 'codifies', in the form of a 'decision of an international organization' (and as such, it becomes part of the Dutch legal system), once again what had already been 'codified' in the Bali Action Plan. Namely, that based on the

best available scientific knowledge, as documented in AR4, it is urgent[31] to realize large emission reductions in order to reach the long-term goal of keeping global warming under 2 degrees Celsius.

4.3.6 Durban and thereafter

213. At the COP17 in Durban in 2011, it was jointly agreed by Parties in Decision 1/CP.17 (**Exhibit 32**) *inter alia*:

- To recognize that climate change constitutes an urgent and potentially irreversible threat to human societies and the planet and should be addressed urgently by all parties; and

- To declare with great care that there is a significant gap between the promised reductions for the year 2020 on the one hand and on the other, scenarios/routes where there is still a reasonable chance of keeping global warming below 2 degrees or 1.5 degrees Celsius:

  'Recognizing that climate change represents an urgent and potentially irreversible threat to human societies and the planet and thus requires to be urgently addressed by all Parties…,

  Noting with grave concern the significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2 °C or 1.5 °C above pre-industrial levels' (emphasis added).

214. The gap identified in Decision 1/CP.17 between the promised emission reductions for the year 2020 on the one hand and the scenarios/routes with a reasonable chance of achieving the 2 degrees target on the other hand, is now often referred to as the 'Emissions Gap'. This Emissions Gap is still growing. A treaty to succeed the Kyoto Protocol with quantified emission reductions from 2012 that can close the Emissions Gap has not yet been established and is not expected in the short term, despite the acknowledgment by all States Parties of the need for such reductions.

215. In 2010, both the Dutch Environmental Assessment Agency (PBL) and the United Nations Environment Programme (UNEP) came to the conclusion on the Emissions Gap that even if all the pledges made by industrialised countries in Copenhagen and the announced emission reduction measures were implemented, the necessary

[31] See the Bali Action Plan for the interpretation thereof.

reduction targets for 2020 would not be met by a long shot. There is a large and growing gap between what is needed in reductions and what has been pledged in reductions by countries. Both reports show that even with the highest (conditional) pledges for 2020 (made under the condition that other countries also achieve higher emission reductions), the two degree target will not be met. For the EU this means the conditional pledge of 30% reduction by 2020, for the U.S. the conditional pledge of 17% reduction, Norway 40% in 2020 and so forth. For Urgenda c.s., one reason to demand a reduction of 40% in these proceedings is the fact that even a reduction of 30% by 2020 is not enough as the Dutch contribution to the achievement of the two-degree target. In November 2012, the UNEP released its report 'The Emissions Gap Report 2012', with important contributions from the PBL (**Exhibit 33**). On the occasion of the publication of this report, the PBL published (**Exhibit 34**) the following on its website:

'Scaling up and accelerating action on climate change without delay will reduce the risk that keeping global average temperature rise below 2°C becomes an unrealistic prospect. It shows that global greenhouse gas emissions levels are now more than 10% above a minimum of the 2020 emission range under the least-cost pathway towards 2°C… If action is delayed and emissions remain high up to 2020, more rapid emissions cuts would be required in subsequent years to have a 'likely' chance of keeping global temperature rise below 2°C. Such delayed-action pathways imply trade-offs, including higher overall costs, higher climate risks of overshooting the target as well as heavier dependence on key mitigation technologies in the long term, such as bio-energy with carbon capture and storage.'

216. This report also shows that greater reductions than those that have been promised are urgently required to have a reasonable chance of achieving the 2-degree objective and that this is also the most cost effective.

217. All this makes clear that the parties to the UNFCCC – including the Netherlands – have, in the form of various 'decisions of an international organization', acknowledged:
    a. that the Earth is heading for dangerous climate change that threatens human societies and ecosystems of the planet;
    b. that to the best scientific insights, large emissions reductions by industrialized countries before 2020 are necessary (25-40%) in order to stay below the 450 ppm limit and to allow that dangerous climate change of more than 2 degrees or 1.5 degrees Celsius may still be prevented; and
    c. that rich countries with a long history of greenhouse gas emissions that have caused the problem, and those with high per capita emissions, have an obligation to take the lead and be the first to realise their necessary emissions reductions by 2020.

4.4 The European Convention on Human Rights

4.4.1 General introduction

218. As has already been mentioned when discussing the UNFCCC, the parties to that treaty – including the Netherlands – have acknowledged that climate change poses a serious and urgent threat to ecosystems, humanity and human societies (and most prominently the socially disadvantaged part of society), as well as to the enjoyment of human rights. This makes it clear that Dutch emissions of greenhouse gases can – and must – be tested against human rights treaties to which the State is bound. In the case of the Netherlands, the most prominent of these treaties is the European Convention on the Rights of Humans (hereafter: ECHR). Urgenda c.s. will therefore set out the importance of the provisions of the ECHR to these proceedings.[32]

219. The ECHR lists a great number of human rights. Urgenda c.s. particularly invoke (jointly and separately) the rights laid down in Article 2 (the right to life) and Article 8 (the right to private and family life).

220. Article 34 of the ECHR determines that individuals can apply to the European Court of Human Rights in Strasbourg (hereafter: ECtHR) when they are of the opinion that their rights under the Convention are violated. In order to bring a case before the ECtHR, national avenues for seeking redress must first be exhausted. Article 33 of the ECHR furthermore determines that states can also file complaints against other parties to the treaty.[33]

221. The ECHR falls within the larger body of international law. This means that states that are party to the ECHR have the obligation to ensure the rights that are laid down in its provisions. When they fail to do so, liability is created under the body of international law.

222. Article 1 of the ECHR is fundamental to the obligations of the parties that are derived from the Convention:

'*The High Contracting Parties shall secure to everyone within their jurisdiction the*

[32] This part of the summons has benefitted greatly (and in parts literally cites) the 2004 report commissioned by the Dutch Association of Administrative Law (VAR) titled: 'The ECHR As an Integral Part of Dutch Substantive Administrative Law', by T. Barkhuysen. (original Dutch title: 'Het EVRM als integral onderdeel van het Nederlandse materiële bestuursrecht').

[33] The last point is made in anticipation of the possible defense of the State that awarding the claim of Urgenda c.s. would demand great financial and economical efforts of the State, which would put the State at a competitive disadvantage vis-à-vis other countries that would not take up such efforts. This defense cannot succeed now that the Netherlands could restore the 'level playing field' by demanding of other countries to undertake the same type of efforts; article 33 EHCR explicitly grants the Netherlands this right.

rights and freedoms defined in Section 1 of this Convention.'

The obligation in this provision is one of performance: the rights and freedoms specified in the first section of the charter will have to be ensured in fact.

223. Violations of rights established by the treaty therefore must be prevented. The purpose of the treaty is not merely to be able to conclude that a violation has taken place after the fact. On the contrary, the performance obligation is aimed at preventing that violations ever take place. The ECHR therefore applies the prevention principle.[34]

224. The duty contained in Article 1 of the ECHR comprises both the duty to refrain from violations of the rights and freedoms under the Convention, and the active duty to prevent such violations. Since the entry into force of the ECHR, the ECtHR has confirmed existence of this positive duty to act for a number of provisions in a wide range of cases.

225. Article 13 of the ECHR determines that states have the obligation to ensure that an effective remedy before a national authority exists where claims of violations of the rights under the Charter can be filed. Such a national authority must be able to determine according to the jurisprudence of the ECtHR whether violations have occurred, and when this is the case, such authority must be able through a binding decision to ensure that the violation is fully repaired, or compensated in the form of damages.

226. The question then arises as to whose rights and freedoms the State is obligated to ensure and protect.

227. In this context, Article 1 of the ECHR refers to ´everyone´ who resides within the jurisdiction of that state. Article 34 of the ECHR clarifies that this also includes groups of individuals or non-governmental organisations.

228. The protection under the ECHR moreover is not restricted to the territory of the state, but is bound to the execution of its jurisdiction. In other words, regardless of the policy area in which the state exercises its jurisdiction, it can only exercise that jurisdiction within the boundaries set by the ECHR.

229. It is furthermore important to clarify who carries the obligation as worded in Article 1 to actively ensure the rights and freedoms under the Convention. Under the EHCR, that obligation in principle rests only on the state. The state is the only entity against

[34] See the cases mentioned in the following paragraphs, but also for instance the judgement of the ECtHR of 6 September 1978 (Klass v. Germany) and 22 October 1981 (Dudgeon v. United Kingdom).

which, on the basis of Article 34 of the ECHR, parties can file complaints at the ECtHR.

230. The ECtHR has consistently held that the obligation of Article 1 of the ECHR rests on all organs of the state – thus all public authorities, be it governing, legislative, or judicial, at both the central and decentralized level are accountable. For this purpose, it is irrelevant whether that authority exercises its power under private or public law. Article 1 of the ECHR moreover infers strict liability on the state as to the protection of the rights and freedoms under the Convention.

231. Human rights violations by private individuals or enterprises can also indirectly be attributed to the state. As has been previously explained in this summons, this is a very common mechanism under international law; the state is responsible and liable for the consequences of activities on its territory, even when it does not conduct these activities itself. This responsibility rests on the idea that the state has the sovereignty and the power to regulate and control activities on its territory (through such instruments as legislation, policing force, taxation and judicial and administrative enforcement), and it can therefore also be held responsible for the use of this sovereignty and power.

232. Attribution to the state of violations of human rights by private individuals and enterprises happens especially in cases where the ECHR holds a positive obligation to protect certain rights. This positive obligation can for instance come in the form of an obligation to enact effective legislation.

233. The present proceedings indeed involve such an indirect attribution to the state for a violation of human rights. Urgenda c.s. do not address the emissions belonging (only) to the Dutch State itself, but rather all emissions of everyone who falls under the jurisdiction of the State (in short, all emissions from the Dutch territory). Urgenda c.s. are of the position that based on Article 2 and Article 8 of the ECHR, the Dutch State carries the positive obligation to take preventative measures against climate change, mainly by reducing Dutch emissions to an adequate level, so as to prevent the violation of the rights and freedoms as laid down in Article 2 and Article 8 of the ECHR.

234. The foregoing makes clear that the protection of the human rights specified in the ECHR is primarily the responsibility of national authorities. On the basis of Article 1 of the ECHR, the executive and the legislative authorities will have to respect the rights under the ECHR in each and all of their actions. The same applies to national judges when they have the opportunity to correct the action of the other parts of the state when their actions are in violation with the ECHR. This principle is laid down in Article 13 of the ECHR, which demands the existence of an effective remedy before a national authority for claims of breaches of the rights under the ECHR.

235. As has been mentioned before, the constitution of the Netherlands determines that binding international law (such as the ECHR) is directly applicable in the national legal sphere. International law thus has domestic application. The executive and the legislature have to respect the norms of the ECHR, and the courts have to test the legality of state actions against its provisions. Moreover, as has been mentioned before, private individuals can also directly invoke those rights when they are binding on all persons by virtue of their contents. Articles 2 and 8 of the ECHR are such binding provisions.

236. The provisions of the ECHR can therefore form the basis for an action in tort, because a violation of the rights and obligations contained in them is considered a violation of a statutory duty as worded in article 6:162 of the Dutch Civil Code. This is especially the case with actions of the state against which no administrative appeal is available. In such proceedings, reparations of damages can be demanded, as can court orders and injunctive relief relating to government actions.

237. The ECHR represents the highest legal norm in the Dutch legal system against which the legality of state actions can be tested. When protection under the ECHR is claimed, a Dutch court can and must test the actions of the state against the ECHR. Such claims can also result in courts ordering the state to take action that are aimed at preventing violations of the ECHR from taking place.

4.4.2. Article 2 of the ECHR

238. Article 2 of the ECHR protects the right to life. In the case of L.C.B. v. the United Kingdom, the ECtHR determined for the first time that Article 2 of the ECHR imposes a positive obligation on states to protect the lives of individuals who fall under their jurisdiction.[35] Since this judgement, a large body of case law has been established in which this positive obligation has been applied and elaborated upon.

239. The existence of positive obligations under Article 2 of the ECHR has been acknowledged by the ECtHR in a wide variety of circumstances: police protection for a teacher against the threats of a student,[36] a life threatening situation as a result of the temporary leave of a detainee,[37] protection against a mentally unstable cellmate in prison,[38] negligence of a physician leading to the death of a baby[39] and the

[35] ECtHR 9 June 1998, L.C.B. v. United Kingdom, par. 36.

[36] ECtHR 28 October 1988, Osman v. United Kingdom, par. 115-116 (no violation was concluded, due to the absence of a real and direct threat to life).

[37] ECtHR 24 October 2002, Mastromatteo v. Italy, p. 69-79 (no violation was concluded because there were no indications of threat at the time of the decision for temporary leave).

[38] ECtHR 14 March 2002, Edwards v. United Kingdom, par. 54-64 (violation on the basis of the vulnerable situation of prisoners and the fact that the authorities were aware of the psychological condition of the individual in question).

reimbursement of medical costs.[40] In the case of Öneryildiz v. Turkey, the Court explained in broad terms that the positive obligation under Article 2 of the ECHR applies to all life-threatening situations, including environmental risks.[41]

240. Based on the aforementioned case law, it can be concluded that the state has the obligation to take all the necessary measures that, having regard to its competences, can reasonably be expected to prevent the coming into being of a life-threatening situation of which it is aware or ought to be aware. For this purpose, it is irrelevant whether the possible (environmental) danger is caused by the state itself or by third parties. In the context of environmental danger, the mere prohibition to live in a specific geographic area would not be sufficient to fulfil this duty.

241. This rule implies that states have to erect an adequate system of surveillance and (preventative) enforcement, as well as set up a system of norms and licences that are aimed at preventing life-threatening situations. Necessary measures may not be postponed due to other circumstances such as financial difficulty.

242. It proceeds from the obligation under Article 2 of the ECHR that the state must provide adequate information to its citizens regarding potentially dangerous situations. It can be inferred that the state is also obligated to provide for effective remedies through which private individuals can enforce the prevention of potentially dangerous situations.

4.4.3 Article 8 of the ECHR

243. Besides Article 2 of the ECHR, Urgenda c.s. also invoke their rights under Article 8 of the ECHR: the right to private and family life.

244. The relatively broad wording of Article 8 of the ECHR has enabled the ECtHR to apply this provision to a wide variety of situations. Article 8 of the ECHR holds both positive and negative obligations. In the case López Ostra v. Spain, the ECtHR concluded that Article 8 of the ECHR holds the positive obligation to protect citizens against the consequences of environmental pollution, even in cases where this pollution is not life threatening. Violations occur in cases of serious pollution that damages the welfare of individuals to such an extent that effective enjoyment of the right of private and family life is no longer possible.

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[39] ECtHR 17 January 2002, Calvelli & Ciglio v. Italy (no violation due to the presence of effective legislation and enforcement mechanisms).

[40] ECtHR 21 March 2002, Nitecki v. Poland (admissibility decision) (no violation because a 30% patient's contribution for life-saving medicines was not unreasonable, given the specific circumstances.

[41] ECtHR 18 June 2002, Öneryildiz v. Turkey, par. 59-94.

245. Article 8 of the ECHR also holds the positive obligation (similar to Article 2 of the ECHR) to inform citizens about environmental dangers in order to protect their private and family life.[42]

246. The obligation to take preventative measures and to inform/warn also follows from judgements in the cases Tatar v. Romania (ECtHR 27 January 2009), Storck v. Germany (ECtHR 16 June 2005) and Öneryildiz v. Turkey (30 November 2004). It follows from these judgements that the obligation to take measures is created in situations where there is increased risk of a violation of the right to life or private and family life. The obligation exists regardless of whether the damage has already taken effect (Di Sarno v. Italy, ECtHR 10 January 2012) or whether the time at which a violation would occur is unpredictable (Budayeva v. Russia, ECtHR 20 March 2008). In the Budayeva case, the Court concluded that the positive obligation of states to take measures to protect the right to life of everyone under its jurisdiction relates to '*any activity, whether public or not, in which the right to life may be at stake.'* The positive obligation for the state therefore also exists when dangerous emissions come from non-state activities such as industrial enterprises and from fellow citizens (Lopez-Ostra v. Spain, ECtHR 9 December 1994).

247. In order to discharge the positive obligation, attempts of the state to reduce the intensity of a violation are insufficient; measures must achieve the desired effect (Dees v. Hungary, ECtHR 9 November 2010). Proving that attempts have been made at reducing violations is therefore also not sufficient. The measures have to deliver results.

248. The current 'attempts' of the Dutch State with regard to climate change are insufficient with respect to the result that may be demanded from the State. The necessary result can only be reached when the Dutch State contributes proportionately to tackling the global climate problem through necessary emissions reductions.

The efforts of the State have also been insufficient with regard to the duty of the State to inform and warn citizens of the impending violation of human rights through climate change. A sufficient level of information would only be reached when society shows a substantial behavioural change as to the use of energy and other emission-producing resources.[43] This is all the more the so now that the member states to the

[42] ECtHR 19 February 1998, Guerra e.a. v. Italy, par. 57-60; ECtHR 9 June 1998, McGinley & Egan v. United Kingdom, par. 99-101; compare also Öneryildiz v. Turkey, par. 84-86 (in which the Court found an active information obligation on the basis of article 2 ECtHR).

[43] This standard for the level of information that actively needs to be provided by the state also follows from the judgement of the Dutch Supreme Court in the Jetblast case (HR 8 May 2004, NJ 2005, 105). In this case, the Supreme Court decided that the warning signs against Jetblasts that were put up by the airport of the island of Sint Maarten were insufficient to fulfil its duty of care. In order to fulfil its obligations under the duty of care, the warning signs would have to have the actual effect of inducing a rationally acting individual to behave in a

UNFCCC concluded in the 2010 Cancun agreements that nothing less than a paradigm shift in society would be needed to tackle climate change: '*The Conference of the Parties realizes that addressing climate change requires a paradigm shift towards building a low-carbon society…'* Neither the Dutch government nor society as a whole shows any sign of this paradigm shift. It can therefore only be concluded that until now the State is not fulfilling its duty to inform about and warn against the impeding dangers of climate change.

249. In the context of climate change, it is also relevant that the ECtHR attaches importance to whether or not an individual has the possibility to avoid incurring damage, for instance by moving to another more environmentally friendly area. When moving away is not possible, the state has a higher obligation to protect the rights of the individual. This follows from the judgement by the ECtHR in the Fadayeva v. Russia case (ECtHR 9 June 2005). In this case, Russia claimed that no violation of Article 8 of the ECHR had taken place because the individuals involved had moved to the industrial area out of their free will and were also able to leave this area if they chose to do so. The ECtHR did not agree with this position on the basis than because there was an absence of relevant information concerning the dangers involved, Fadayeva could not be blamed for moving to the polluted area. The most important aspect of this case lies in the further reasoning of the Court where it explains that the individual concerned must have a *real* choice in accepting or preventing the damage being done to his or her health due to the industrial activities. In the Fadayeva case, the ECtHR decided that the applicant did not have such a real free choice due to the unavailability of alternative social housing in the area and the fact that she lacked the personal finances that would allow her to move to private housing farther away from the source of pollution. In other words, Fadayeva had no other choice than to endure the pollution from the industrial area. On these grounds, the ECtHR decided that Russia had violated Article 8 of the ECHR and that Russia had an active duty to protect the applicant against the damaging consequences of the pollution.

250. In the case that the Dutch state remains negligent in taking its proportional responsibility for preventing dangerous climate change, Urgenda c.s. also do not have a real choice but to face its devastating effects and to endure the violation of their (human) rights that will occur as a result of it. To this extent, Urgenda c.s. lie at the mercy of the actions of the State and therefore need the protection of the State.

251. The fact that a situation that potentially violates the rights of an individual also influences a whole country or region, as is the case in these proceedings, does not prevent the ECtHR from finding a violation in an individual case. In the case Di Sarno

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manner in which the damage would not occur. A simple warning is not enough; the warning must be sufficiently effective to prevent dangerous situations and influence human behaviour.

v. Italy (judgement of 10 January 2012), applicants complained against the garbage crises that had affected the city of Naples and its surroundings for years. The Italian State argued against the finding of a violation. It held that the case was based on an *action popularis* that evidently lacked any individualized interest of the applicants. The Italian State accused the applicants of attempting to change Italian legislation through such a general action before the ECtHR. The ECtHR acknowledged that the applicants' complaint related to a situation that affected a whole region. However, the Court found that there was sufficient evidence to conclude that the applicants were concerned about and affected by the garbage crises due to the accumulation of garbage on the streets and garbage fires that were of a severity that necessitated the frequent intervention of firefighters. Because it had been sufficiently established that the applicants were directly affected in their health and physical integrity, the Court found that Article 8 of the ECHR could be applied to this situation and that therefore the defence of the Italian state could not succeed on these grounds.

252. It can be concluded that while the whole territory of the Netherlands will be affected by climate change and that at least a substantial part of its inhabitants will suffer a violation of their rights as a consequence, this does not prevent the application of human rights protection. This also follows from the Okyay v. Turkey case (judgement of 12 July 2005). The applicants in this case lived at a distance of 250 km from three old coal-fired power plants that were the cause of a large amount of pollution. Turkey argued that due to this distance, the applicants could not be exposed to specific and threatening danger to their health. The ECtHR based itself on an expert report that had also been used in the national proceedings, which confirmed the presence of a threat to public health in an area around the power plants with a diameter of 2350 km. This meant that the applicants were also affected by this health danger. The ECtHR found that (at para. 66): *'[t]hat distance covers the area in which the applicants live and brings into play their right to protection of their physical integrity, despite the fact that the risk which they run is not as serious, specific and imminent as that run by those living in the immediate vicinity of the plants.'* The ECtHR therefore made clear that an individual interest also exists in cases where a threat to public health is created in a very large area in which the damage to individuals can vary.

253. In the case Taşkin v Turkey (judgement of 10 November 2004), the ECtHR decided that a generally known and thus foreseeable health risk formed sufficient ground for the protection of Article 8 of the ECHR, even when the danger would only materialize after decades. The case concerned the pollution caused by a local gold mine. Turkey argued that Article 8 of the ECHR did not apply to this case on the grounds that the specific danger that was the subject of the applicant's complaint would only occur in approximately 20 to 50 years. For this reason, the danger was hypothetical, not serious or imminent, which meant that no human rights protection would be justified.

The ECtHR did not accept this argument, on the basis that this would be detrimental to the effective application of Article 8 ECHR. The ECtHR found that for the protection of Article 8 to apply, it is sufficient that there is a clear link between the dangerous effects of the activity on the one hand and the probability of the complainant being exposed to those effects on the other.

254. Due to the great importance of this reasoning, Urgenda c.s. cite it in full (par 113):

'Article 8 applies to severe environmental pollution which may affect individual's well-being and prevent them from enjoying their homes in such a way as to affect their private and family life adversely, without, however, seriously endangering their health…The same is true where dangerous effects of an activity to which the individuals concerned are likely to be exposed have been determined as part of an environmental impact assessment procedure in such a way as to establish a sufficiently close link with private and family life for the purposes of Article 8 of the Convention. If this were not the case, the positive obligation on the State to take reasonable and appropriate measures to secure the applicant's rights under paragraph 1 of Article 8 would be set at naught.'

255. The fact that in the Taşkin case the danger would only materialize after decades was therefore an insufficient ground for withholding the protection provided by Article 8 of the ECHR. As discussed above, due to the delayed effect, the dangers inherent in climate change will also only be felt a number of decades after they are caused. With regard to this aspect, the case filed by Urgenda c.s. is no different from the circumstances in the cases discussed above, including Fadayeva, Di Sarno, Okyay and Taşkin. Similar to the current proceedings, in those cases there was a clear relationship between the dangerous effects of industrial activities on the one hand and the fact on the other hand that individuals would only be exposed to those dangers at a future point in time. It can therefore be established that the insufficient actions of the Dutch State to take its proportional responsibility to protect against dangerous climate change results, or at the least will result at a future point in time, in a violation of human rights. It can moreover be established that Urgenda c.s. have a sufficiently individualised interest in this matter to allow protection under the ECHR because Urgenda c.s. are exposed to risks of dangerous climate change and are dependent on the State to protect them against this danger.

256. Lastly, Urgenda c.s. point out that the protection of their rights not only proceeds from traditional human rights such as those under the ECHR (Articles 2 and 8), but also from the socio-economic human rights that are articulated in the Treaty on the Functioning of the European Union (hereafter the TFEU). More particularly, the right to a high level of human health protection (article 168 TFEU) and the protection of the environment (article 191 TFEU). The precautionary principle that is laid down in

these articles forms an autonomous fundamental principle of European Union law; see inter alia the judgement of the Court of Justice of the European Union (CJEU) Artegodan v. Commission of 26 November 2002 (quote at nr 184): '*Since the Community Institutions are responsible, in all their spheres of activity, for the protection of public health, safety and the environment, the precautionary principle can be regarded as an autonomous principle stemming from the abovementioned Treaty Provisions*'. Here the Court refers to the articles mentioned earlier in the judgement concerning '*a high level of protection of health*' (168 TFEU) and '*a high level of protection of the environment*' (191 TFEU). This autonomous precautionary principle, through the application of Article 4.3 (principle of sincere cooperation) of the Treaty on European Union (TEU), has direct applicability in the Dutch legal order and the Dutch State.

257. Urgenda c.s. are of the opinion that these social human rights and the precautionary principle that lies within them have been violated by the Dutch State. The is all the more the case because the State has chosen not even to take the lowest level of possible protection within the band of 25% to 40% emissions reduction before 2020 when formulating its climate policy. Even the most marginal of tests of the Dutch climate policy against the articles 168 and 191 of the TFEU make clear that these policies do not provide the minimum necessary level of protection, let alone comply with a high level of protection of human health and environment as is demanded in the TFEU.

4.5 National law: unlawful act

4.5.1 Nuisance

258. 'Transboundary' nuisance has been a well-known phenomenon in Dutch case law for over a century, which concerns nuisance that crosses property boundaries.

259. In 1915, even before the Lindenbaum/Cohen case, the Dutch Supreme Court reached a decision in the Voorste Stroom I judgement (19 March 1915, NJ 1915, p. 691), a case that involved the heavy pollution of an upstream river to the extent that downstream users of the river experienced severe nuisance, that all the owners of pieces of the riverbank that stretched along the river had the right to use the river for a wide range of purposes, as long as this use would not unduly hinder the use of that water by the other owners. The unlawfulness of the excessive discharges in this judgement was constructed as a violation of the property rights of the downstream owners and users of the riverbank. At the time of this case, the 'rule of unwritten law pertaining to proper social conduct' had not yet been defined as a criterion for unlawful behaviour.

260. More than 70 years later, the Supreme Court would use an almost identical formulation in the Potash Mines case, which will be more broadly discussed below. In that case, the Supreme Court found that '*in principle the downstream user of a river may justifiably expect that a river is not unduly polluted by extensive upstream discharges'*. In the Potash Mines judgement, the Supreme Court constructed the unlawfulness of the discharges not as a violation of property rights of downstream users, but as a violation of the '*rule of unwritten law pertaining to proper social conduct'*.

261. After the Potash Mines case, the Dutch Civil Code (hereafter DCC) was amended in 1992 to include a separate Article on 'transboundary nuisance'. Article 5:37 DCC prohibits the owner of a piece of land to bring nuisance to other owners in a way that is unlawful, for instance by spreading smoke or gases: 'the owner of a piece of land may not cause nuisance to owners of other pieces of land, to a degree or in a manner that is unlawful according to Article 162 of Book 6, by spreading noise, vibrations, odours, smoke or gases, or by withholding light or air or by taking away support.' Article 5:37 of the DCC is applicable not only to owners, but also to other users of neighbouring properties. Even a non-owner user also has the right to be free from nuisance caused by his or her neighbour. Nuisance is thus not formulated as the violation of property rights, but rather as a violation of the 'rule of unwritten law pertaining to proper social conduct'.

262. In scholarly literature, doubts have been expressed over the added value of Article 5:37 DCC, arguing that it adds little to Article 6:162 DCC (the general ground for liability for unlawful acts), and because Article 5:37 DCC only applies when all the criteria of article 6:162 DCC are fulfilled as well.
In other words, 5:37 DCC is only aimed at the nuisance category within the larger scope of the unlawful act. Urgenda c.s. nonetheless refer to this Article because it clearly illustrates the fundamental principle that one may not inflict unlawful damage from one's own territory upon others who are situated in the surrounding area. This principle of national civil law thus has great resemblance to the international 'no harm' doctrine which, as has been explained, is the underlying rationale of the UNFCCC.

263. The unlawful nature of nuisance in current law can be found in a breach of a personal right, i.e. an act or omission violating a statutory duty of a rule of unwritten law pertaining to proper social conduct. In practice, this division of categories seems to be of little relevance. Assessing the unlawfulness of nuisance takes place in all cases on the basis of the same criteria.
For the sake of completeness, Urgenda c.s. nonetheless point out that the emissions that are the subject of these proceedings, due to their consequences, fall under each of the three categories of unlawfulness:

- Article 2 and Article 8 of the ECHR grants Urgenda c.s. (human) rights, such that the offending emissions must be seen as a violation of their (human) rights. Reference can be made to the Cancun agreement, where in Decision I/CP.16 it is established that climate change has negative impacts on the '*enjoyment of human rights*'.

- Because the principles of international law, international treaties and decisions of international organisations to which Urgenda c.s. have referred in the foregoing have direct application in the Dutch legal sphere and create duties for the Dutch State, it must be concluded that offending emissions violate a legal duty which the Dutch State is bound to perform under international law.

- Referring to the judgement in the Potash Mines case mentioned above, Urgenda c.s. argue the offending emissions violates the rule of unwritten law pertaining to proper social conduct.

264. An established line of jurisprudence has determined that the illegal character of nuisance is dependent on the specific circumstances of the case. Case law has developed a number of relevant considerations that must be taken into account, such as the nature of the nuisance, the severity of the nuisance, the duration of the nuisance, the damage inflicted, and the circumstances in which the nuisance takes place. This last consideration can be subdivided into factors such as the weight of the interests that are served by the activities that cause the nuisance versus the possibility of taking preventative measures and the willingness to do so.

4.5.2 Endangerment

265. The criteria that are used to establish the existence of unlawful nuisance carry great resemblance to the criteria developed in case law for finding unlawful endangerment. These criteria have for the first time been clearly defined in the Cellar Hatch judgement (in Dutch: Kelderluikarrest) of the Dutch Supreme Court (5 November 1965, NJ 1966/136). This resemblance is not coincidental; endangerment could be seen as the superlative of nuisance. Nuisance generally refers to the disruption of the enjoyment of a good, while endangerment generally refers to the heightened chance of damage to that good.

266. In the application of the Cellar Hatch criteria, the questions for a court to determine are: the degree to which the danger can be known, the chance that the damage will materialize, the severity of the potential damage (compare for instance damage to health with damage to goods) and the possibilities to take preventative measures. An example of the application of the Cellar Hatch criteria can, for instance, be found in the Wilnis case (HR 17 December 2010, NJ 2012, 155). In this case, liability of the Water Control Board (in Dutch: hoogheemraadschap) for a faulty structure (a peat dyke) was tested against the Cellar Hatch criteria. It is of significance that the Wilnis

case is generally seen as the first case of climate change related litigation in the Netherlands, and it may be viewed as a prelude to the claims for damage that will grow in size as climate change takes its course.[44]

267. Urgenda c.s. are of the opinion that the lawfulness of the offending emissions should be tested not only against the 'nuisance' criteria but also against the criteria for finding 'endangerment'. The fact that CO_2 emissions pose great dangers has already been shown in Chapter 3. Moreover, it has also been discussed that the State itself recognises the severity of this danger and has recognised the necessity of reducing emissions before 2020 by 25-40% below 1990 levels in order to have a chance of preventing that danger.

268. A situation of continuous unlawful endangerment for which the State holds responsibility leads almost automatically to a violation of Articles 2 and 8 of the ECHR. The criteria of these Articles therefore need to be applied in the assessment of the unlawfulness of the danger and nuisance that are created by CO_2 emissions.

269. Urgenda c.s. are of the opinion that the facts of the current proceedings share great similarity with the factual situation that led to the judgement in the Potash Mines case. That judgement set the standard for assessing (unlawful and transboundary) nuisance. This judgement also illustrates how international law, particularly the 'no-harm' principle, can be applied through 'open norms' such as the rule of unwritten law pertaining to proper social conduct. The judgement shows that 'no-harm' is a principle of such fundamental importance that it can be found in almost all cultures of law. For this reason as well, Urgenda c.s. devote special attention to this judgement.

4.5.3 The Potash Mines jurisprudence

270. The Potash Mines judgement is the seminal judgement in the Netherlands on the liability for the consequences of transboundary emissions.

271. The judgement involved a number of Dutch growers who used drainage water that was partially fed by the water of the Rhine to irrigate their lands. The Rhine water was however heavily salinized, which caused great damage to the Dutch growers.

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[44] For 400 years, the Netherlands has used peat dykes to protect its low-lying grasslands (polders) against rivers and canals that lay on higher levels. Severe precipitation is a well-known risk to these types of dykes. In the Netherlands, climate change will lead to more precipitation in winters and greater heat and droughts in summers. In 2003, Western Europe experienced a long and severe heatwave. For the first time in 400 years, peat dykes all over the country dried up to an extent that caused the dykes to form cracks and become unstable. During this summer in the town of Wilnis, part of a peat dyke extending approximately 60 meters in length subsided, leading to the flooding of several hundred family houses. The Water Control Board had not been prepared for the extreme heat that took place that year. However, as climate change progresses, the summer of 2003 is likely to become 'business as usual'.

272. One of the central issues of the case causation, namely, that the salt content of the Rhine had multiple causes and contributors. Some of the salinization was due to natural causes upstream, such as the penetration of seawater into the river water and groundwater which contributed to the salt content of the drainage waters. In addition to the natural causes, there were several human-related sources of pollution, including the discharge of industrial wastewater by mines and of wastewater from other industries, cities and villages. These sources were situated in a multitude of places in France, Switzerland, Germany and the Netherlands.

273. In 1973, the Bonner Salt Treaty was adopted. This treaty provided for a sizable (approximately 50%) reduction of salt discharges into the Rhine from the potash mines situated in France. States thus made an agreement under international law to reduce the salt concentration in the Rhine.

274. Parallel to the conclusion of this treaty, Dutch agricultural companies initiated legal proceedings against the French potash mines. The first issue that had to be addressed in this case was one of private international law: which court had jurisdiction over the case? Was it the court in the jurisdiction where the damage was incurred (Netherlands) or the court in the jurisdiction where the damage was caused (France)? In a judgement of 30 November 1976, the European Court of Justice (case 21/76, NJ 1977, nr. 494, p. 1637-1641) decided that both courts had jurisdiction.

275. This case has important implications for the present proceedings. The judgement determines that a Dutch court has jurisdiction over damage in other countries that occurs as a consequence of Dutch CO_2 emissions, and this court will also have to take into account the damage caused in other countries when deciding the lawfulness or unlawfulness of those emissions. The present proceedings therefore are not limited to the damage caused in the Netherlands by Dutch emissions, but rather they relate to all other countries where this (often much more severe) damage is done.

276. In an interlocutory judgement of the court of Rotterdam, the Judge applied the indicative effect (*indizwirkung*) of international customary law that was already referred to above. The Judge concluded that the case in its core concerned a dispute between states, which meant that (unwritten) customary rules of international law had to be applied. Referring to the Trail Smelter case, the Judge concluded that the dispute had to be decided on the basis of the generally accepted principle that 'one can use that which belongs to oneself only to the extent that it does not harm another'. In this context, the Rotterdam Court also concluded that the Bonner Salt Treaty did not prejudice the application of this general principle. The agricultural companies were therefore able to address the potash mines on the basis of this principle of common law, regardless of whether or not those mines had complied with the requirements under that treaty.

277. In other words, when deciding in a tort case between two private parties, the Rotterdam District Court applied Dutch law in conformity with the 'no-harm' principle, thus making use of the indicative effect (*indizwirkung*).

278. In its final judgement in the case on 16 December 1983, the District Court of Rotterdam based its decision on both national and international law. The Court first concluded that the Potash Mines had acted in violation of their duty of care towards interests of others, in this case the agricultural companies. Furthermore, the Court concluded that if the facts had been tested against international law, the result would have been the same.

279. On 10 September 1986, the Court of Appeal in The Hague denied the appeal filed by the Potash Mines, basing its decision exclusively on national law principles. The Court of Appeal found that the Potash Mines had acted in violation of its duty of care. That judgement was confirmed by the Dutch Supreme Court on 23 September 1988 (NJ 1989, 743). The judgement of the Supreme Court will be further discussed in Chapter 6 of this Summons.

5. Substantiation of the claim

5.1 The core of the objections against the State

280. The main demand of Urgenda c.s. is that the Dutch state shall drastically, and no later than 2020, reduce CO_2 emissions coming from within the boundaries of the Netherlands, with the aim of preventing the risk of dangerous climate change, or at least of reducing this risk. In addition to this, Urgenda c.s. seek a declaratory judgement. For the sake of completeness, Urgenda c.s. note that this declaratory judgement involves a so-called 'generic' declaration regarding the dangers that climate change is likely to cause. Such a general declaration cannot serve itself as the first step toward possible future claims for damage due to climate change. The legal recognition that climate change will lead to certain (generic) severe dangers such as an increase in the number of hurricanes in no way prejudices the legal determination by a court whether in a specific case damage has been caused by a hurricane that would not have developed in the absence of climate change. For such damage claims, a specific causal link between climate change and a specific case of damage must be established. The generic declaration will in no way suffice for such a purpose. For this reason, awarding a declaratory judgement will not induce the filings of individual damage claims. It is in fact easier to argue the reverse: the specific difficulty of establishing the causal link in an individual case between damage and climate change is an important and strong argument in favour of a declaration

demanding generic and preventative measures against climate change, such as is claimed in these proceedings.

281. With this in mind, the position of Urgenda c.s. is that the magnitude of the total Dutch CO_2 emissions is unlawful with respect to them and the legal interests that Urgenda represents.

282. More specifically, Urgenda c.s. are of the opinion that the Dutch CO_2 emissions, both in absolute terms but even more so as per capita of the population, are of such magnitude and impact that these CO_2 emissions are unlawful and that the reductions of emissions demanded should be urgently compelled.

283. To clarify: Urgenda c.s. *are not* of the position that the Dutch CO_2 emissions will lead *in themselves* to unacceptable nuisance of danger within or outside of the Netherlands.

284. Urgenda c.s. *are* of the opinion that:
- the Dutch CO_2 emissions constitute a non-negligible and even substantial contribution to the increase of CO_2 concentrations in the atmosphere of the earth;
- the Netherlands therefore carries partial responsibility for the excessively high CO_2 concentrations in the atmosphere of the earth; and that
- the Netherlands therefore is partly responsible for the damaging consequences of the excessively high CO_2 concentrations in the atmosphere that will cause global dangerous climate change.

285. Urgenda c.s. are therefore concerned with the illegality of the *contribution* of Dutch CO_2 emissions to the global CO_2 emissions, in light of the consequences of these global CO_2 emissions for the atmosphere of the earth and all the consequences this will have for the climate and the liveability of the earth.

286. Urgenda c.s. are of the opinion that for this partial responsibility for global dangerous climate change, the Dutch state is liable and answerable towards claimants.

5.2 Why the Dutch State is liable for CO_2 emissions on Dutch territory

5.2.1 Article 21 of the Constitution and the Environmental Protection Act

287. Urgenda c.s. base the liability of the Dutch state for CO_2 emissions from the Dutch territory (including emissions from third parties) first of all on article 21 of the Dutch Constitution. In this article, the government of the Netherlands has been entrusted with the care for the habitability of the land and the protection and improvement of the environment.

288. For over a century, the state has taken up the care for the environment and the habitability of the land, for instance through the enactment of the Nuisance Act, which pre-dated the Environmental Protection Act and the Environmental Licensing Act that are currently in force. These acts are the instruments through which the state has fulfilled its constitutional duty to protect and improve the environment and to secure its citizens against nuisance.

289. One example of this is article 1.1a paragraph 1 of the Environmental Protection Act. This provision imposes an obligation on everyone to take appropriate care for the environment: '*Everyone will take appropriate care for the environment*.' This provision is meant as a backstop provision on the basis of which the government can act against environmentally damaging behaviour even in the absence of a violation of a specific norm or provision. Enforcement of a specific (emissions) norm is of course still possible. However, the backstop provision shows that the State sees itself as carrying the final responsibility for the protection of the environment; even in cases where a specific provision is absent, the State can always act against environmentally damaging activities.

290. Moreover, article 1:1 paragraph 2 sub a of the Environmental Protection Act determines that under this act consequences to the environment at the least encompasses: '*consequences to the physical environment, seen from the perspective of the interest of the protection of human beings, animals, plants, goods, water, soil, and air; of scenic, scientific, cultural, and historical values; and of control over the climate, as well as the relationships between all of these things.'* The provision thus determines that the state has to take into account the climate when making decisions in the environmental context; combating climate change is therefore made explicitly the responsibility of the state in all its departments and branches and at all levels.

5.2.2 Article 2, article 8, and article 13 of the ECHR

291. The fact that the Dutch State can be held liable for environmental pollution that originates within its territory (for instance through CO_2 emissions) also follows from the 'no harm' principle that has already been discussed extensively, and in particular from articles 2 and 8 of the European Convention on Human Rights (ECHR). These international law norms can only be invoked against states, and they therefore pre-eminently indicate the state as the responsible and liable party.

292. Furthermore, the protection sought by Urgenda c.s. against the excessive total Dutch CO_2 emissions can only be provided by the State. Aside from the legal obstacles, it would be practically impossible for Urgenda c.s. to hold liable in court each individual emitter of CO_2 in the Netherlands and demand that they reduce emissions. The legal

protection that Urgenda c.s. seeks against the total of Dutch CO_2 emissions can only be provided by the State. The absence of the possibility to hold the State liable for the level of Dutch CO_2 emissions would result in the absence of an effective remedy against the violations of the rights of Urgenda c.s. under article 2 and article 8 of the ECHR. This in turn would be a violation of article 13 of the ECHR that ensures the existence of such effective remedy.

293. Moreover, the State in fact holds the power to reduce Dutch CO_2 emissions or have them reduced. Urgenda c.s. call attention to the following competences.

5.2.3 Competence to regulate CO_2 emissions on the basis of the Environmental Licensing Act

294. Article 2.1 paragraph 1 sub e of the Environmental Licensing Act determines that in principle all companies with a large amount of CO_2 emissions need to obtain and possess an environmental licence. On the basis of article 2.30 of the Environmental Licensing Act, the authority that grants the licence needs to determine on a regular basis whether the conditions that are attached to such a licence are still adequate with regards to (amongst others) developments with respect to environmental quality. In the event that such developments (for instance the high level of Dutch CO_2 emissions) require further limitation of the undesirable consequences for the environment of a licensed facility (for instance due to high CO_2 emissions), article 2.31 paragraph 1 sub b of the Environmental Licensing Act gives the relevant authority the duty to tighten the conditions of the environmental licence. Moreover, article 2.31 paragraph 2 sub b of the Environmental Licensing Act gives the relevant authority the power to change the conditions of the licence of a facility insofar as this is in the interest of the protection of the environment. The article therefore provides a legal base upon which the State can create stricter emission standards in relation to environmental licences when this benefits the environment. On the basis of article 2.34 of the Environmental Licensing Act, the Minister of Environmental Affairs can moreover give a binding instruction to the relevant authority to use the powers that are mentioned here.

295. The Dutch State therefore (already) holds the powers to strongly influence Dutch CO_2 emissions and to have them reduced. This can for instance be done by creating a long-term programme which provides for a step-by-step lowering of CO_2 emission allowances in licensing conditions, or if necessary – on the basis of article 2.33 of the Environmental Licensing Act – by completely revoking licences. Furthermore, such a program would provide long-term certainty to market entities, strongly promoting and speeding up decisions to invest in CO_2-free energy supplies.

5.2.4 The great influence of the state on energy supplies: financial

296. The Dutch State has a great influence on the total Dutch CO_2 emissions, but it uses this influence mainly to *stimulate* the use of fossil fuels (and thus the emission of CO_2). This is apparent from the report 'Governmental interference in the energy market – an investigation into the Dutch market circumstances for fossil fuels, renewable energy, nuclear energy, and energy efficiency' (*Overheidsingrepen in de energiemarkt – onderzoek naar het Nederlandse speelveld voor fossiele brandstoffen, hernieuwbare bronnen, kernenergie en energiebesparing)*, drawn up by research bureaus CE Delft and Ecofys in October 2011 at the request of energy company Eneco and Triodos Bank (**Exhibit 35**). The summary of the report begins as follows:

"Through at least 53 financial and other measures, the government exerts great influence on the Dutch energy market. Each of these interventions has been put into place in the past for a variety of reasons. While the priority in energy policies is shifting towards lowering emissions and increasing the security of supply, the portfolio of measures is not automatically following this new direction. By testing all interventions against their coherence with current targets for energy and climate, the government can steer developments toward greater effectiveness and probably lower cost as well.

*For example, the government supports the **end-use** energy market (which is dominated by fossil fuels) with € 4.6 billion annually. In the Netherlands, large-scale consumers paid € 1.8 billion less in energy taxes in 2010 than would be justified based on the total societal costs for energy production. In comparison, small-scale consumers paid € 2.8 billion more in taxes than these societal costs.*

*On the **production** side of the energy mix, the interventions that were investigated were primarily aimed at low-carbon technologies. In 2010, € 1.2 billion in government spending was directed at fossil fuel sources and nuclear energy, and € 1.3 billion towards renewable energy.*

When taken together, fossil fuels were subsidised by € 5.6 billion and renewable energy was subsidised by € 1.5 billion in 2010. This was done using 53 separate measures."

297. These numbers speak for themselves. The State apparently has the financial capability to strongly influence and steer the organisation of the energy supply in the Netherlands. The numbers from this report make it clear that the State uses this influence to stimulate the use of fossil fuels (and thus CO_2 emissions) much more than it stimulates the use of CO_2-free energy sources.

298. The difference between the relatively low energy taxes paid by large-scale users of energy and the relatively high ones paid by small-scale users is explained further on in the report. The Netherlands has a degressive energy tax system, in which large-scale users pay lower taxes per unit of energy the more units they use. Small-scale users, most of which are private consumers for whom it is much more difficult to reduce energy use, pay the full price. Such a degressive tax system definitely does not stimulate large-scale users to reduce their CO_2 emissions. Reducing CO_2 emissions requires large investments in alternative energy sources. Large-scale users will not make such large investments as long as they are able to get their electricity and gas at a near-zero unit cost because of their large consumption. The tax system lengthens the payback time of such investments.

299. Large-scale energy use with its connected high CO_2 emissions could be made more expensive by the State, which would stimulate a CO_2-free energy supply. In fact, the State is doing exactly the reverse: in the current system, the high tariffs paid by small-scale consumers subsidize the large-scale users of fossil energy.

300. The fact that the State influences the volume of Dutch CO_2 emissions means that the State can also be held responsible and liable for that volume of emissions. Competence and use of influence creates responsibility and liability.

5.2.5 The great influence of the state on energy supplies; distribution of emission allowances

301. The information in the following paragraphs is taken from the publication of 9 September 2013 of the Netherlands Environmental Assessment Agency: 'The Netherlands has fulfilled its greenhouse gas emission obligations under the Kyoto protocol' (*Nederland voldoet aan de Kyoto-verplichting uitstoot broeikasgassen*) (**Exhibit 36**).

302. By signing the Kyoto protocol, the Netherlands has committed itself to reduce the emission of greenhouse gases by an average of 6% in the years between 2008 and 2012 compared to the Kyoto base-year. This obligation held that during this period the Netherlands could emit a maximum of 1001 million tonnes of CO_2 equivalent. This amount of 'emission credits' was thus assigned to the Netherlands. Emissions that would go beyond this emission ceiling were not allowed on the basis of the Kyoto protocol and would have to be compensated by buying emission rights from other countries (or by participating in certain mitigation projects abroad).

303. The state has allocated the allowed emission amount of 1001 million tonnes of CO_2 equivalent between two groups of companies. The first group were companies that fell under the European Emission Trade System (ETS). The second group were

companies that fell outside of that system (non-ETS). ETS companies, usually large industrial companies and power plants, had themselves the responsibility to obtain a sufficient amount of emission credits. If they had emitted more greenhouse gases than were covered by emission credits received from the state, they would have been obliged to purchase additional credits so that their total emissions were fully covered by such credits.

304. It has since become clear that the state handed out more free emission rights to the ETS companies than those companies needed to cover their emissions in the period between 2008 and 2012. The numbers are as follows: in the period 2008 through 2012, the total emission of Dutch ETS companies was 406 million tonnes of CO_2-equivalent, while 421 million tonnes of emission credits had been handed out by the state for free. In other words, these companies received 15 million tonnes more emission credits then they needed to cover their own emissions. It is self-evident that such a generous policy of handing out emission credits does not promote investments in CO_2-free energy supplies.

305. The sectors that fall outside of the ETS emitted a total of 549 million tonnes of CO_2 equivalent in the period from 2008 through 2012. This is 30 million tonnes of CO_2 equivalent above the amount of emission credits that was attributed by the state to these companies. However, the state has compensated for these emissions by buying emission credits from other countries. According to the Dutch Emissions Authority, the government had bought 45 million tonnes emission credits as of 31 July 2013, and this amount will grow to 48 million tonnes of emission credits.

306. These figures too are clear. Instead of forcing the non-ETS companies to stay within the amount of emission credits that were allocated to them, the state has bought foreign emission rights so that the Dutch non-ETS companies did *not* have to reduce their own emissions. The state has carried the costs of these emission credits. The state has therefore provided a *de facto* subsidy for CO_2 emissions.

307. Through the allocation of emission credits, the Dutch State therefore has great influence on the Dutch CO_2 emission level. However, the state uses this influence to stimulate the use of fossil fuels. Here as well, competence and the use of influence creates responsibility and liability. Urgenda c.s. can therefore address the State and hold it responsible for the level of Dutch CO_2 emissions.

5.2.6 Conclusion

308. On the basis of the foregoing, Urgenda c.s. are of the opinion that they are right in addressing the State in their claim and that the Dutch State can also be held to account for that which they desire.

5.3 No order to legislate

309. The claims of Urgenda c.s. do not imply a *de facto* order to legislate. The court is therefore not asked to give such an order. The above examples show that the State already holds numerous possibilities to satisfy the claims of Urgenda c.s., without having to adopt (new) legislation. This does not alter the fact that besides the already existing competences, new legislation would also be an appropriate means to comply with Urgenda's claims.

6. Legal grounds of the claim

6.1 General

310. Urgenda c.s. are of the position that the Dutch CO_2 emissions in their present total volume are unlawful. For this reason, the claim of Urgenda c.s. is a claim arising from an unlawful act or tort.

311. A tort or unlawful act is a breach of right, an act or omission violating a statutory duty, or an act or omission in violation of the general duty of care. Urgenda c.s. have already argued in the foregoing chapter that the Dutch CO_2 emissions are unlawful under each of these three categories.

312. The volume of the Dutch CO_2 emissions can be held to be unlawful on the basis of a number of different legal grounds. The first legal ground is the 'no-harm' principle. The second ground comprises the obligations of the State under the UNFCCC and the COP decisions that have followed since the treaty's conclusion. The third comprises the rights that are ensured under article 2 and article 8 of the ECHR. And the fourth comprises the legal grounds based in tort such as nuisance and endangerment. Urgenda c.s. are of the opinion that whichever legal ground is chosen, the current volume of Dutch CO_2 emissions must be held to be unlawful in character.

313. As was discussed above, each of the legal grounds shares a number of viewpoints and criteria with the others. In each case, these viewpoints and criteria are essentially the same. Differences mainly occur when these criteria are applied to different factual circumstances.

6.2 The Potash Mines judgement: similarities

314. The factual circumstances in this procedure are very similar to those if the Potash Mines (*Kalimijnen*) case mentioned above.

315. In the Potash Mines judgement (*Kalimijnen*, Dutch Supreme Court, 23 September 1988, NJ 1989, 743), the Supreme Court held that when damage occurs as a consequence of cumulative emissions from different sources, this leads to *pro rata* liability. In these circumstances, each source is liable individually for its part in causing the damage.

316. Similar to the Potash Mines judgement, Urgenda c.s. are of the position that the Dutch State can be held liable for its share (*pro rata*) of the total (global) CO_2 emissions, and that the contribution of this share to causing damage is unlawful.

317. For this reason, Urgenda c.s. will set out the way in which the Dutch Supreme Court came to its judgement in this case. Urgenda c.s. are of the opinion that the Potash Mines judgement carries great weight in the present proceedings, in particular now that the facts in both cases share great resemblance and are in some points almost identical. Urgenda c.s. are of the opinion that, based on the Potash Mines judgement, the ruling in the present case will have to be that the magnitude of the current Dutch CO_2 emissions is unlawful towards Urgenda c.s..

318. In its judgement, the Supreme Court first determined that the Bonner Salt treaty did not prejudice the liability of private parties in relation to salt discharges from different countries.
- The similarity with the present proceedings is that the UNFCCC and the Kyoto protocol also do not prejudice the possible liabilities for causing damage. The fact that, according to the State, the Netherlands has fulfilled is reduction obligations under the Kyoto protocol therefore does not rule out a claim filed by Urgenda c.s. in relation to those Dutch emissions.

319. The Potash Mines judgement related to Dutch drainage waters that had reached an excessively high salt concentration, partly due to natural causes and partly due to human discharges that originated from different countries. The Potash Mines were sued in court because through their salt discharges that occurred from French territory they had substantially contributed to the damage that had occurred in another country.
- The parallel that can be drawn between the two cases is that in the present proceedings the damage that is the result of high CO_2 emissions is partly caused by natural occurrences and partly by human (anthropogenic) emissions from different countries. The Dutch State is held responsible for this (climate) damage, because – according to Urgenda c.s. – Dutch CO_2 emissions have contributed to this damage both within and outside of the Dutch territory.

320. In the Potash Mines judgement, the Supreme Court held that the high salt level of the drainage waters was also caused by natural occurrences and discharges from

different sources. The Supreme Court also concluded that in comparison to all sources of salt pollution the French salt discharges were limited, but not negligible.
- The parallel that can be drawn is that the contribution of Dutch CO_2 emissions might be relatively small (this subject will be addressed further down) when compared to all global emissions, but they are certainly not negligible. On the contrary, Dutch emissions are relatively large when measured against per capita emissions. The UNFCCC has in fact held that per capita emissions are the relevant standard of comparison (see the above discussion of the UNFCCC, in particular the third cited paragraph of the preamble, which refers to the principle of 'common but differentiated responsibilities' in article 3).

6.3 The Potash Mines judgement: *pro rata* liability in cases of cumulative emission damage

321. In the Potash Mines judgement, the French parties that were addressed in the proceedings were of the opinion that the damage to the agricultural companies would also have occurred in the absence of their discharges and that those discharges in themselves therefore did not constitute an unlawful act.
- The parallel that can be drawn with the present proceedings is that the Dutch Government in its letter of 11 December 2012 seems to argue that individual actions taken by the Netherlands will not have any impact on the climate problem. Reduction of Dutch emissions would only lead to the 'leaking' of emissions to other countries. Thus even if the Netherlands were to reduce its emissions to the level that is demanded by Urgenda c.s., climate change would occur nonetheless.

322. The Advocate General in his conclusion in the Potash Mines case commented that with their position the French mines essentially argued that the principle of '*conditio sine qua non*' was not fulfilled (at point 8.8 of the opinion). He followed by stating that this principle '*is not applicable in the case of concurring (cooperating, cumulative) causes for damage. This position could lead to the unacceptable consequence that none of the salt dischargers could be held liable in the situation where for instance 10 companies discharge salt in equal proportions and damage would already occur when the total volume of salt discharges would be half the size that it has in reality*.'

323. In paragraph 3.3.2 of the judgement, the Supreme Court held that whether the French mines acted unlawfully towards the downstream users of the river Rhine was '*dependent on the nature, severity, and duration of the damage caused to the parties downstream'*. The Supreme Court added that in making this determination the interests served by the discharges and the interests of the other users of the river also had to be taken into account, '*as well as the degree to which the downstream use is sensitive to the discharged substances. It has to be taken into account that*

when weighing the different interests that are at stake, the interest of the downstream users carries special weight in that these users in principle may expect that the river will not be excessively polluted due to large discharges.'

324. The Supreme Court therefore starts by asking whether the drainage water of the downstream users is (excessively) unlawfully polluted.

325. After this question has been answered in the affirmative, the question is addressed to what extent the party addressed is liable for the total discharge of salt.

326. In the Potash Mines judgement, the Supreme Court held that the discharges by the French mines were unlawful, despite their relatively small contribution to the total amount of salt discharges. To this end, the Supreme Court used the following line of reasoning.

327. The Supreme Court first determined (following the previous determination of the Court of Appeal) that there was a clear connection between the level of salt concentration in the drainage waters on the one hand and the level of damage done to the growers on the other. On the basis of the connection between the two factors, the Supreme Court concluded that each salt discharge that was not negligible would contribute to the creation of the damage proportionately. On this basis, the French mines were held liable for the portion of the damage created that corresponded to their contribution to the total salt discharges. In other words, as a partial contributor to the larger problem, the French mines carried a *pro rata* liability for their share in that larger problem.
More generally: in cases of concurring, cumulative causes for damage, liability is based on *pro rata* contribution to that damage.

328. As was already explained above, under international law in cases of concurring causes for damage, a state only holds liability for the share of the damage that can be attributed to it.

6.4 Consequences for the present case

329. It follows from the Potash Mines judgement that in order to establish liability of the Dutch State, it must first be established whether the earth's atmosphere has been excessively and thus unlawfully polluted with CO_2. Urgenda c.s. argue that there can be no doubt that, based on all the facts that have been laid out in the above chapters, this question must be answered in the affirmative.
In the terminology of the 'no-harm' principle: emissions are leading to significant nuisance and degradation.
In the terminology of the UNFCCC: the CO_2 concentration is not compatible with the

goal of preventing dangerous climate change and the 'common responsibility' to take 'urgent' actions.
In the terminology of articles 2 and 8 of the ECHR: emissions are leading to significant infringements of human rights.
In the terminology of tort, nuisance and endangerment such as was used in the Potash Mines judgement: the CO_2 concentrations in the atmosphere cause damage to all the users of that atmosphere, namely the current ecosystems, the current climate, and human society.

330. Having established this fact, the question remains whether the Dutch contribution to the excessive and thus unlawful CO_2 concentrations, is unlawful in itself.

331. In this connection, it is of course important that – as was the case in the Potash Mines judgement – an undisputed connection exists between the level of CO_2 concentrations in the atmosphere and the damage that is caused in the form of planetary heating. Higher CO_2 concentrations lead to more heating and thus greater dangers to the ecosystems. This connection is described as climate sensitivity and has already been described in the introductory remarks of this summons.

332. It follows from the Potash Mines case that because a proportionate connection exists between the level of CO_2 concentration in the atmosphere on the one hand and climate heating on the other, the Dutch State must be held liable on a *pro rata* basis for the Dutch contribution to the global CO_2 concentration.

333. It similarly follows from that case that this would only be different if the Dutch contribution to the global CO_2 concentration were deemed to be negligible. This is however not the case. On the contrary, Urgenda c.s. is of the position that the Dutch contributions are substantial. This position will be further elaborated upon in the following section.

6.5. The magnitude of the Dutch emissions

6.5.1. The Dutch emissions in comparison: real numbers

334. The Potash Mines case involved French salt discharges that were in themselves sizable; and although the contributions to the total salt concentration were relatively small, they were not negligible.
The question therefore is whether the Dutch CO_2 emissions are in themselves sizable, and whether they contribute to global CO_2 concentrations in a manner that is more than negligible.

335. To answer this question, Urgenda c.s. will first describe the total annual emissions in the Netherlands.

336. The Emission Registration Database can be accessed via www.emissionregistration.nl and comes under the auspices of the Ministry for Infrastructure and Environment. The emission data from this database is used to compile reports, including those prepared in the context of the Kyoto Protocol. According to this database, the Dutch CO_2eq emissions[45] in 2010 were 209 megatonnes, or 209 billion kilograms of greenhouse gasses. Of this total, CO_2 emissions contributed 181 megatonnes, or 181 billion kilograms of CO_2 (equal to 86.6% of the total greenhouse gas emissions)

337. For 2011, the numbers were 194 megatonnes of CO_2eq and 181 megatonnes of CO_2. The database however mentions that the reduction in total CO_2eq emissions is mainly due to a gentle winter in which less heating was used, and a reduction in industrial activities due to an economic downturn. The total greenhouse gas emissions in 2011 therefore deviate from the previous trend, but this is not the case for CO_2 emissions. These were equally high in 2010 and 2011.

338. When judged in light of the reduction targets of 20% compared to 1990, it is striking that between 1990 and 2010 within the totality of all greenhouse gases (CO_2eq), the Dutch CO_2 emissions have increased from 159 megatonnes to 181 megatonnes. This increase within the total of greenhouse gas emissions (CO_2eq) is masked by the fact that the emissions of other greenhouse gases in this period have strongly decreased. The fact that Dutch CO_2 emissions are still increasing is all the worse because CO_2 does not break down in the atmosphere once emitted and remains active there for millennia, while other greenhouse gases do have this capability and thus slowly disappear from the atmosphere and lose their heating potential.

339. On the basis of these numbers, the relative magnitude of Dutch emissions compared to other countries cannot yet be determined.

340. This comparison should not be made on the basis of absolute numbers. With a population of approximately 17 million people, the Netherlands is a relatively small country. China for instance has a population of 1.35 billion. It would be unreasonable to expect that a country of 1.35 billion would not emit more CO_2 than a country of 17 million. A comparison in absolute numbers would therefore only be of limited value. The outcome of this comparison is nonetheless surprising.

[45] The volume of all greenhouse gasses taken together is often expressed in 'CO2 equivalent', or 'CO2-eq'.

341. The World Bank maintains a list with data on the annual global emissions of 217 countries (**see Exhibit 37**). The order of the countries on the list is based on the ranking of their emissions in 2009. Number 1 is the country with most emissions (China) in 2009, number 2 (United States) is the country with the second highest emissions in 2009, etc. The Netherlands takes the 25th position on this list. When ranked on the basis of population size, the Netherlands only ranks 63rd. Thus when compared to its population, the Netherlands ranks disproportionally high in the list of emitters.

342. On the basis of data from the US Energy Information Administration, the Guardian had a CO_2 atlas compiled (**see Exhibit 38**). On this map, all countries are represented as circles. However, the size of each circle corresponds not to the land area of the country but rather to the emissions of that country in 2009. This atlas thus visualises the absolute size of Dutch emissions compared to other countries. The CO_2 atlas clearly shows that the size of Dutch emissions is substantial and certainly not negligible.

343. The CO_2 atlas also shows the absolute magnitude of emissions of each country in 2009 (for the Netherlands 249 million tonnes) and its emissions ranking (for the Netherlands 25th), as well as an arrow that indicates whether emissions went up or down compared to the emissions in 2008 (in the case of the Netherlands, emissions went down by 0.2%).

344. These arrows clearly show that emissions in other comparable and neighbouring countries have come down considerably faster. Next to the 0.2% reduction of the Netherlands, Germany reduced 7%, the United Kingdom 7.8%, Belgium 11.2%, France 7.4%, Spain 8.4%, and Italy 9.4%.

345. The Environmental Assessment Agency in its online 'climate files' (**see Exhibit 10**) also places the Netherlands on the 25th place of largest emitters in the world.

346. On the basis of these numbers, it appears that the Netherlands is an important emitter of CO_2 that moreover, compared to its 'peers', is reducing the least. The Netherlands appears not to be a front runner when it comes to efforts to reduce CO_2 emissions, but rather it situates itself far behind in the pack.

6.5.2. The Dutch emissions in comparison: per capita

347. As was mentioned before, the preamble of the UNFCCC assigns per capita emission levels as the relevant standard of comparison, to be applied in differentiating between reduction obligations and responsibilities on the basis of the principle of 'common but differentiated responsibilities'.

348. The World Bank also maintains a list with data on the emissions of countries per capita.[46] [47] (**see Exhibit 39**).

349. Of the 25 countries which in absolute sense belonged to the largest CO_2 emitters in the world (with the Netherlands being the 25th largest), a ranking of the 10 largest CO_2 emitters per capita in the world would look as follows (between brackets shows the ranking based on absolute numbers):

1.	*Australia (15):*	*19.64 tonnes of CO_2 per capita;*
2.	*Saudi Arabia (11):*	*18.65 tonnes of CO_2 per capita;*
3.	*United States (2):*	*17.76 tonnes of CO_2 per capita;*
4.	*Canada (7):*	*16.15 tonnes of CO_2 per capita;*
5.	***Netherlands (25):***	***14.89 tonnes of** CO_2 **per capita;***
6.	*Taiwan (20):*	*12.66 tonnes of CO_2 per capita;*
7.	*Russia (4):*	*11.23 tonnes of CO_2 per capita;*
8.	*South Korea (8):*	*10.89 tonnes of CO_2 per capita;*
9.	*Germany (6):*	*9.3 tonnes of CO_2 per capita:*
10.	*South Africa (12):*	*9.18 tonnes of CO_2 per capita;*

and further, for purposes of illustration:

Japan (5):	*8.64 tonnes of CO_2 per capita*
United Kingdom (10):	*8.25 tonnes of CO_2 per capita:*
Italy (17):	*7.1 tonnes of CO_2 per capita;*
France (18):	*6.3 tonnes of CO_2 per capita;*
China (1):	*5.83 tonnes of CO_2 per capita;*
Brazil (14):	*2.11 tonnes of CO_2 per capita;*
Indonesia (16):	*1.72 tonnes of CO_2 per capita;*
India (3):	*1.38 tonnes of* CO_2 *per capita:*
World:	*4.49 tonnes of* CO_2 *per capita.*

350. The list clearly shows that compared to the rest of the world, Dutch citizens very considerably contribute to the total of global anthropogenic CO_2 emissions: the Dutch rank 5th.

351. The list also clearly shows which countries can be expected to contribute the most to emissions reduction on the basis of emissions levels that are far above the average; the Netherlands belongs among those countries.

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[46] https://docs.google.com/spreadsheet/ccc?key=0AonYZs4MzlZbdFF1QW00ckYzOG0yWkZqcUhnNDVlSWc&hl=en#gid=0.

[47] Unlike the absolute emissions, this list does not contain a ranking.

352. Emissions data for the years 2010 and 2011 have in the meantime also been published by the Dutch Environmental Assessment Agency in its report 'Trends in Global Emissions; 2012 Report' of July 2012 (**Exhibit 40**), see page 28, Annex I, Table A1.3. The list includes substantially the same countries as mentioned above.

353. According the this report, the Dutch emissions in 2010 were 10.5 tonnes of CO_2 per capita, which would place the Netherlands on the 7th place of largest per capita emitters. In 2009, the Netherlands emitted 9.8 tonnes of CO_2 per capita, which would put it 9th in the ranking.
The data from the Dutch Environmental Assessment Agency thus confirms that compared to other world citizens, the Dutch contribute far above average to total global CO_2 emissions.

354. Also in its 'climate files' mentioned above (**see Exhibit 10**), the Dutch Environmental Assessment Agency places the Netherlands in the 9th place of per capita emitters (based on the 2011 data).

6.5.3. Carbon intensity

355. When it comes to reducing the so-called 'carbon intensity' of the economy, the Netherlands also places itself far behind in the pack of European countries. Carbon intensity expresses the amount of CO_2 emission that is needed to produce one unit of GDP (gross domestic product). For example, one country may need 30 tonnes of CO_2 emissions to produce 1 million euros GDP, while another emits only 15 tonnes to earn the same value. Urgenda c.s. refer to the overview that was compiled by PricewaterhouseCoopers (**see Exhibit 41**). The Netherlands has a very high carbon intensity.

356. For each million dollars of GDP, the Netherlands emits 371 tonnes of CO_2. Compared to this, Germany emits only 235 tonnes, France 153 tonnes, the UK 209 tonnes, Spain 211 tonnes and the EU 213 tonnes. In the period 2000–2011, the Netherlands achieved an average annual reduction of its carbon intensity of 0.7%. Germany reached 2.2%, France 2.4%, the United Kingdom 2.8%, Russia 3.9%, the United States 2.1%, China 1.4% and the EU 2.3%. The Netherlands is thus far behind in its efforts to reduce its carbon intensity.

6.6. Conclusions

357. Both when comparing emissions figures in absolute terms and even more so when comparing emissions per capita, the Netherlands excessively and very substantially contributes to the excessively high global CO_2 concentration in the atmosphere. Its

contribution is certainly not negligible.
The condition for *pro rata* liability in situations of jointly caused 'creeping' damage that was laid out by the Supreme Court in the Potash Mines case is therefore fulfilled. The total magnitude of Dutch emissions is unlawful and the Dutch State is liable for damage caused.

7. Emissions reductions of 40% below 1990 levels by 2020

358. The unlawful magnitude of Dutch CO_2 emissions forces the state to reduce those emissions. In its letter of 12 November 2012, Urgenda demanded a reduction of greenhouse gas emissions of 40% below 1990 levels before 2020. In addition to what has already been mentioned about this demand, Urgenda c.s. will here further elaborate on this.

359. For a good grasp of the argumentation behind the 40% demand, it is important to elaborate on the distinction made in science between CO_2 concentration in the atmosphere and the concentration of CO_2-eq.

360. As was mentioned in the above, the Bali Action Plan, in its explicit recognition of the urgency of emissions reductions before 2020 and 2050, used 450 ppm CO_2-eq as the definitive boundary that cannot be crossed. More specifically, reference was made to the information in 'Box 13.7' on page 776, chapter 13 WG III of the IPCC report AR4. This table shows the emission reductions that are needed before the years 2020 and 2050 in order not to breach the 450 ppm CO_2-eq threshold (**see Exhibit 42**).

361. When indicating the volume of all greenhouse gasses taken together, including CO_2, the notation CO_2-eq, which stands for 'CO_2 equivalent', is often used. To express the total effect of all greenhouse-gas emissions, an accounting unit is used in which the effects of all greenhouse gases are converted into the heating potential of CO_2. The threshold of 450 ppm CO_2-eq means in practice that the threshold for CO_2 is lower because CO_2-eq also expresses the effect of other greenhouse gases such as methane. The fact that the threshold is also often expressed as 450 ppm CO_2 is explained in 'note b' to the aforementioned table. Here it is explained scientifically that a temporary 'overshoot' of 50 ppm CO_2-eq would be permitted as long as the (temporary) maximum concentration would not cross 450 CO_2 (not CO_2-eq).

362. As was mentioned before, the countries that have agreed to the UNFCCC have established that in order to maintain a 50% chance of staying below 2 degrees Celsius global warming, we need to observe an upper bound of 450 ppm CO_2-eq. Because the actual boundary lies at a temporary overshoot of 50 ppm CO_2-eq, this boundary can also be expressed as 450 ppm CO_2. In order to *maintain* the chance of 50% to stay under 2 degrees global warming, the IPCC explains that once the level

of 450 ppm is reached, concentrations will subsequently have to go down to a long term stabilisation level between 350 and 400 ppm. Early in 2013, the maximum long-term level of 400 ppm CO_2 was already breached, and based on the current trend in emissions, the maximum top level of 450 ppm will be reached within 20 years.

363. Based on the different thresholds of 2 degrees Celsius heating, a 450 ppm CO_2-eq maximum, and a 350 to 400 ppm long-term stabilisation level, emission reduction targets for industrialised countries (Annex I countries) were established in the IPCC Conference of Parties (COP) meetings in Copenhagen and Cancun. These reduction targets took into account the principle of 'common but differentiated responsibilities', which meant that those countries would have to accomplish deeper and earlier emissions reductions than non-industrialised countries. In Copenhagen and Cancun, it was established that Annex I countries such as the Netherlands and the other member states of the EU would have to achieve emissions reductions compared to 1990 of 25-40% before 2020 and 80-95% before 2050.

364. These reduction targets were based on the findings of IPCC that were amongst others reported in the aforementioned 'Box 13.7' in chapter 13 of the WG III in AR4 (see paragraph 360 above and **Exhibit 42**).

365. Part of the background of the information in 'Box 13.7' is set out in chapter 3 of the WG III, AR4 (see **Exhibit 43**). Table 3.10 of that chapter shows different scenarios of temperature increases linked to emission reduction paths (the outcomes of the scenarios are based on a 'best estimate' for 'climate sensitivity' of 3 degrees Celsius temperature increase at a doubling of greenhouse gases in the atmosphere[48]). The table shows that only the most far-reaching reduction targets (used under scenario 1 out of 5 scenarios) are sufficient to stay under 2 degrees heating. In this scenario, a bandwidth is taken of 350 to 400 ppm CO_2 and 445 to 490 ppm CO_2-eq. To quote the IPPC report (p.227, chapter 3, WGIII, AG4):

'This "best estimate" assumption shows that the most stringent (category I) scenarios could limit global mean temperatures increases to 2°C – 2.4°C above pre-industrial levels, at equilibrium, requiring emissions to peak within 10 years. Similarly, limiting temperature increases to 2° C above pre-industrial levels can only be reached at the lowest end of the concentration interval found in the scenarios of category I (i.e. about 450 ppmv CO_2*-eq using "best estimate" assumptions.'*

As was explained above, it is mentioned in 'Box 13.7' (**see Exhibit 42**) that a temporary overshoot of 50 ppm above the 450 ppm CO_2-eq boundary would still be compatible with the max 2 degree scenario (see note b in the box). In this context,

[48] This means that when CO2 concentrations double, the temperature in the atmosphere will increase with 3 degrees Celsius (not taking into account the release of greenhouse gases due to feedback mechanisms).

reference is made by the IPCC to a 2006 publication by Den Elzen and Meinshausen, 'Multi-Gas Emission Pathways for Meeting the EU 2°C Climate Target, in *Avoiding Dangerous Climate Change*' (**see Exhibit 44**). This article describes the rationale behind the possibility of the temporary overshoot, which lies in the fact that so-called aerosols such as particulate matter that are emitted when burning fossil fuels can have a temporary cooling effect in the atmosphere. Aerosols in the atmosphere can reflect or absorb sunlight, which consequently does not reach the earth's surface and thus creates less warming. This cooling effect could compensate the heating from CO_2 up-to a level of 50 ppm. However, if in the future less fossil fuels are burned, the amount of aerosols in the atmosphere will decrease, which also reduces the cooling effect. For this reason, the overshoot of 50 ppm CO_2 can only be temporary, and the overshoot has to be brought back to zero once the cooling effect of the aerosols is reduced. For this reason, the only way to stay under 2 degrees of warming (scenario 1 in table 3.10) is to reduce concentrations back to a range between 350 and 400 ppm CO_2 after it has reached its temporary maximum of 450 ppm CO_2.

366. A different paper by Den Elzen and Meinshausen from 2005 titled 'Meeting the EU 2°C climate target: global and regional emission implications' (**see Exhibit 45**) explains that stabilisation at 450 ppm CO_2 leads to a probability of 60% of a temperature increase that goes far beyond the 2 degree boundary. To have a better chance of staying under 2 degrees, stabilisation has to stay within the bandwidth of 350 to 400 ppm CO_2. In the event that stabilisation is reached at 400 ppm CO_2, the chances of exceeding 2 degrees of warming are still 40%. According to Den Elzen and Meinshausen (2005), a much safer stabilisation level lies between 350 and 375 ppm, in which case there is only a 13% chance of exceeding 2 degrees of warming. The IPCC also indicates that a stabilisation level that lies at the low end of the 350 to 400 ppm bandwidth has to be reached in order to stay under 2 degrees of warming:

'limiting temperature increases to 2°C above pre-industrial levels can only be reached at the lowest end of the concentration interval found in the scenarios of category I.' (p. 227 of chapter 3, WGIII).

Many leading climate scientists therefore take the 350-ppm CO_2 target as the only safe scenario and as the basis for sound climate policy. While 450 ppm implies a 50% chance of breaching the 2-degree heating boundary, a 350-ppm target would be much more in line with the precautionary principle.

367. The foregoing shows that international climate policies – including the 2-degree target and corresponding scenario I reduction targets for 2020 and 2050 of the IPCC – have been based upon extensive scientific data and (inter)national consensus of the definition of dangerous climate change. Despite the fact that it was established as early as 1992 in the UNFCCC that dangerous climate change should be avoided,

measures to avoid concentration levels that will result in such dangerous climate change have not been taken, either by the EU or by the Netherlands. Although countries are all well aware of the dangers that are involved, a situation has been reached in which maintaining a 50% chance of preventing dangerous climate change is more and more unrealistic. In the words of the Dutch Environmental Assessment Agency:

'According to the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4), Annex 1 emission reduction targets of 25 to 40% below 1990 levels in 2020 would be consistent with stabilising long-term levels of greenhouse gas concentration levels at 450 ppm CO_2 *equivalent. This concentration level has a reasonable chance (50%) of avoiding an increase in global average temperature of more than 2°C. Even in the high pledge scenario (assuming all high reduction pledges are implemented…), this range will not be met.'*
[...]
'The high pledges of Annex 1 countries are estimated to lead to a total reduction target that is 18% below 1990 levels. This is well below the range of 25 to 40% below 1990 levels indicated by IPCC as potentially consistent with the 2°C target.' (Evaluation of the Copenhagen Accord: Chances and Risks for the 2°C Climate Goal, 2010, pp. 10 and 49)

368. The 2020 targets are especially important to retain the possibility of staying under 2 degrees warming. The importance of this has already been abundantly indicated in this summons, but it is also stressed in a 2010 report of the United Nations Environment Programme (UNEP) titled: 'The Emissions Gap Report: Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2°C or 1.5°C?'. This report investigates whether actual execution of the 'high pledges' of Annex I countries in Copenhagen (to which the Dutch Environmental Assessment Agency refers in the above citation) before 2020 would lead to a scenario in which the 2-degree boundary is not breached. One of these 'high pledges' is the pledge of the EU to reduce emissions by 30% below 1990 levels if other countries also were to increase their reduction commitments. The report makes clear that even in the event that the 'high pledges' are met by all countries, a large gap would remain between that which is realised by 2020 and that which would be needed to stay under 2 degrees of warming, even in a best case scenario. Thus according to the UNEP, even in the event that all promises made in Copenhagen are strictly kept, the world is still on a course of going far beyond 2 degrees of warming before the end of this century. The UNEP is nevertheless of the opinion that it is still possible, although difficult, to stay within 2 degrees of warming. But for this to happen, much more ambitious reductions targets will have to be met in the coming years:

'In order to bring emissions in line with IAM pathways that meet a 2°C limit, there is

a need to not only implement current pledges fully, but also to raise the ambition of those pledges and lay the groundwork for faster and deeper reductions of post 2020 emissions. Going further in the short term and achieving stronger cuts to lower levels in 2020 would leave open more possibilities to meet temperature limits and would allow more flexibility in choosing a post 2020 pathway for global emissions.'

369. The necessity to implement the largest reductions possible before 2020 is not only based on maintaining a 50% chance to stay below 2 degrees of warming. In the COPs in Copenhagen and Cancun, it was also established that 2 degrees of warming might already be too high and that a 1.5-degree limit might be more realistic to prevent runaway heating of the planet. Very ambitious reduction targets are therefore also needed to maintain the possibility to comply with a warming scenario of 1.5 degrees instead of 2 degrees.

370. The 2011 emissions gap report of the UNEP states that since the publication of its 2010 report, the gap between what is necessary and the actions that countries promise to take has widened. This can also be read in the decision of the COP 1/CP.18 (see also **Exhibit 32**):

'Noting with grave concern the significant gap between the aggregate effect of parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2°C or 1.5°C above pre-industrial levels.'

371. Reduction targets for 2020 that are too low are also a cause for concern from a cost perspective. As was mentioned above, the International Energy Agency has expressed doubt over the feasibility of staying under the 2-degree boundary without strong reductions before 2020, for the reason that in the absence of pre-2020 reductions, costs of reduction will rise with 400%. The Dutch Environmental Assessment Agency also made reference to the strong rise of mitigation costs in its 2012 report: 'Greenhouse gas emission reduction targets for 2030: Conditions for a EU target of 40%' (**see Exhibit 46**):

'Higher 2020 emission levels also imply higher costs throughout the century and a higher dependence on future technological developments, compared with a scenario with lower 2020 emissions levels.'

Thus both agencies, as well as the Stern report mentioned above, confirm that the costs of mitigating emissions will rise exponentially if no ambitious reduction actions are taken before 2020.

372. The 2006 report by Den Elzen and Meinshausen mentioned earlier provides a number of additional arguments in favour of immediate ambitious reduction targets:

> *'If the start of significant emissions reductions were further delayed, the necessary rates of emissions reduction were even higher, if the risk of overshooting certain temperature levels shouldn't be increased (...). Thus, since more rapid reductions may require the premature retirement of existing capital stocks, the costs of any further delay would be increased, probably non-linearly. There are a number of other reasons why one might want to avoid further delay. Firstly, future generations face more stringent emission reductions while already facing increased costs of climate impacts. Secondly, the potential benefits of 'learning by doing'…were limited due to the more sudden deployment of new technology and infrastructure. Thirdly, a further delay of mitigation efforts risks the potential foreclosure of reaching certain climate targets. Thus, a delay might be particularly costly if, for example, the climate sensitivity turns out to be towards the higher end of the currently assumed ranges…'*
> (p. 185)

373. Urgenda c.s. are of the opinion that the factors that are brought forward by Den Elzen and Meinshausen carry great importance. Failing to take sufficient reduction action in the present necessarily means that very substantial costs will be pushed to the future, where the current young generation will be left no choice but to pick up the bill. Our negligence will lead to a worsening of the climate problem, which will mean that damage driven by climate change and costs of adaptation in the future will be much higher that they would be if action were taken now. Besides the vast increase in costs, the chances of successfully averting dangerous climate change are also greatly reduced if reductions do not take place in an earlier phase. If climate change occurs more rapidly than we now assume, the two-degree target will no longer be attainable, and we furthermore deprive our own and future generations of the chance to innovate at a manageable tempo. There would simply be no room for any scientific, technological or societal setback if the necessary reductions do not take place before 2020. Any setback that we might have to confront post-2020 would automatically lead to a breaching of the 2-degree boundary.

374. Based on the foregoing, it can be concluded that the EU reduction target of 20% and the linked Dutch target of 16% below 1990 levels are both insufficient. The policies of the EU and the Netherlands therefore do not correspond to the minimum protection level of 25% reductions before 2020 that they themselves have formulated. This is regardless of the fact that the emission-gap report mentioned above concluded that a reduction percentage of even 30% (let alone 25%) would not be enough.

375. In view of the fact that the current efforts of the Netherlands put us on a trajectory of four to five degrees heating within this century, reduction targets that go even beyond 25-30% are needed in order to contribute to averting dangerous climate change. For a number of reasons, a reduction level of 40% by 2020 is called for.

376. First, reference is made to the IPCC-report and to the report by Den Elzen and Meinshausen mentioned earlier. This report established that in order to stay under two degrees of warming, a concentration level of 350 to 375 ppm is a much safer option as it provides 87% certainty of obtaining this goal. On the contrary, a level of 400 ppm or 450 ppm would only provide a chance of 60% to 40% respectively of staying under 2 degrees of warming. In light of the very serious consequences of dangerous climate change, a higher level of protection is very much justified. The possibility that the boundary for dangerous climate change will have to be readjusted to 1.5 degrees would increase the reduction requirements, which are already high. A concentration level of 350 ppm thus provides the necessary precaution to protect society against dangerous climate change. The IPCC has also concluded that staying on the low bound of the 350-400 ppm bandwidth is necessary if staying under two degrees of warming is the goal. In this connection, it is important to point out that the task that the countries of the 1992 UNFCCC have taken on is to *prevent* dangerous climate change, not merely to have a 50% chance at preventing is, as is the case in the 450 ppm scenario.

377. In order to be able to return to the 350 ppm level in the long term (it is noted that current levels are already over 400 ppm), emissions need to be reduced by 40% compared to 1990 before 2020. This follows from a report written by American, Canadian and European university scholars (**see Exhibit 47**). The report has been drafted for the Atmospheric Trust Litigation, legal proceedings currently conducted in the United States. In this case, the plaintiffs have demanded a yearly reduction target of 6% starting from 2012, which cumulatively comes down to approximately 40% reduction by 2020 relative to 2012.[49] In the situation of the Netherlands, a 40% reduction below 2012 emission levels is comparable to a 40% reduction below 1990 levels. The findings of the report are therefore also relevant for these proceedings.[50]

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[49] If 2012 is 100%, 2013 is 94%, 2014 is 88.36%, 2015 is 83.05%, etc., then 2020 would be 60.95% of the original 2012 levels, which corresponds to an approximate reduction of 40%.

[50] Although the emission reduction targets are not identical, it is submitted that the information from the report used in the Atmospheric Trust Litigation is also appropriate for these proceedings. In the case of the Netherlands, the 40% emissions reduction compared to 2012 comes down to a smaller total reduction than that of 40% reductions compared to 1990. This is so because since 1990 the Netherlands has already reduced its emissions by 5%. The smaller size of emission reduction can be illustrated by taking 1990 as the index year. Say that in that year total emission were equal to 100 units. A 5% reduction means that in 2012 emissions are 95 units. A 40% emissions reduction from 95 units means a reduction of 38 units. This is less than the 40 emission units that are reduced when taking the 40% of 100 emission units in 1990. It is submitted however that of the two, the higher total emissions reduction is more appropriate in case of the Netherlands. As was described before, under the principle of ´common but differentiated responsibilities', Annex I countries should reach a higher yearly reduction target. A reduction level of 40% below 1990 should therefore be seen as the appropriate level of reduction for

378. The report clearly shows that once a concentration level is breached (whether it is 350, 400 or 450 ppm), it is very difficult to return to that level. The explanation on p. 8 of the report gives a good illustration of the difficulty of that process. Here the report describes the speed at which CO_2 concentration levels fall on the basis of natural processes. The report explains that if all fossil-fuel emissions were radically cut back to zero in the year 2015, the 350 ppm concentration level would not be regained until the end of this century. If emissions were completely halted in 2035, it would take until the year 2300 before the 350 ppm concentration level would be regained. If it would take until 2055 for emissions to be put to a complete halt, the 350-ppm concentration level would not be reached before the year 3000. These three scenarios clearly show the increasing difficulty in returning to relatively safe concentration levels the longer we wait to drastically reduce emissions. Returning to concentration levels once they have been breached is very difficult, requires great reduction efforts and takes very long periods to materialize. The report notes that for these reasons, exceeding the safe(r) concentration levels should be avoided, and in order to do this, the right reduction targets for 2020 are crucial.

379. The importance of substantial reductions before 2020 is elaborated upon on page 9 of the report. In this section, the report first describes the consequences of the current 'business as usual' practices. If no reductions take place before 2020, which means that emissions will keep rising with 2% a year (the current reality), then it will no longer be possible to reach the 350 ppm concentration level before 2300. If reductions are postponed until 2030, CO_2 concentration levels will stay at 400 ppm until the year 2500.

380. After this, the report explains the influence of timely reduction targets. Had reductions already started in 2005, a reduction percentage of 3.5% instead of 6% would have been sufficient to return to a concentration level of 350 ppm in the year 2100. Conversely, if reductions were postponed until 2020, a yearly reduction target of 6% would be insufficient; a 15% yearly reduction target until 2050 would be needed. Not using the years until 2020 thus leads to more than a doubling of the reduction efforts. Strong reductions before 2020 are necessary in order to make the task of staying under 2 degrees of warming still possible and also affordable. In the case of the Netherlands, this means a reduction target for 2020 of 40% below 1990 levels (or, analogous to the report of the Atmospheric Trust Litigation, a yearly emission reduction of 6% starting in 2013).

381. There are other reasons for Annex I countries such as the Netherlands to reduce emissions 40% by 2020. For this purpose, reference is made the aforementioned

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the Netherlands in order to deliver a proportionate contribution to returning to the relatively safe CO2 concentration level of 350 ppm.

table 3.10 in Exhibit 43. As was explained there, the 450 CO_2-eq scenario (scenario I), with a corresponding temperature increase of 2 to 2.4 degrees Celsius, was based on the 'best estimate' of a 3-degree climate sensitivity. This means that a doubling of CO_2 concentrations would lead to a 3-degree rise in global temperature (not taking into account possible feedback effects). The table also shows the effects of a climate sensitivity higher than 3 degrees. Concentration levels of 450 ppm would then lead to a temperature rise of 3.6 degrees Celsius. The Dutch Environmental Assessment Agency, together with the Royal Dutch Metrological Agency (KNMI) and the University of Wageningen, published a report in 2009 that explained that the chances of a 3.6-degree temperature rise at a 450-ppm concentration level have increased (**see Exhibit 48**). The report concludes the chances of the sensitivity being higher than 3 degrees are greater than the chances of the climate sensitivity lying at a lower level:

'The odds that the increase will be higher than 3°C are greater, due to several mechanisms in the climate system that may accelerate global warming. Therefore, the chance of underestimation of the future increase in global temperature is larger than of overestimation.'

382. According to the report, the risk of accelerated climate change has also increased:

'Further analysis shows that there are indeed risks of accelerated climate change that were not fully elaborated by the IPCC AR4, and more attention in the literature is given to potentially irreversible processes. The literature mentions "tipping points" – in this report referred to as "eventualities" such as rapid release of methane from the seabed, and the collapse of the West Antarctic ice sheet and the Amazon rain forest. These processes, even if they are less likely to happen, may have very large impacts and, therefore, pose a considerable risk – both globally and regionally.'

383. Based on all the aforementioned grounds, strong CO_2-emission reductions will have to take place before 2020 (as well as after this date). For this reason, the primary demand of Urgenda c.s. is a 40% reduction level before 2020 compared to 1990 levels, which should (or could) be executed based on a linear reduction path of 6% per year starting in 2012 until 2020 (which, based on a 80-95% reduction target, would have to be continued until 2050).

8. Defences by the Dutch State

384. All the defences by the Dutch State known to Urgenda c.s. are shown in the letter of 19 November 2012 sent by the State to Urgenda c.s.

8.1 Letter of 11 December 2012: the Dutch State admits the magnitude and urgency of the climate problem

385. In its letter of 12 November 2012, Urgenda requested the State to take sufficient measures to reduce CO_2 emissions to 40% below the level of 1990 before 2020. In reaction, the State did not dispute the argumentation of Urgenda that reductions are necessary and urgent in order to prevent dangerous climate change. To the contrary, in a letter of 11 December 2012, the Secretary of Infrastructure and Environment, on behalf of the government, agreed with the argumentation of Urgenda.

386. On behalf of the government, the Secretary stated that the concerns about the magnitude of the climate problem were shared by the government, including both the failure to adopt adequate global climate policies and the absence of the sense of urgency in society. The government also acknowledged that emissions reductions of 25-40% before 2020 are necessary, that additional emissions reductions before 2020 are essential and that more actions of the Netherlands and the EU might be necessary, independent of agreement at the international level.

8.2 Letter of 11 December 2012: reaction by the Dutch State and rebuttal

387. Despite the agreement on the facts, the government nonetheless refuses to commit to taking the actions that are necessary. The position of the government seems to be that they only want to act if the rest of the world agrees to do so as well.
The government is apparently of the position that the climate problem is a global problem that primarily requires an international approach: greenhouse gases do not stop at national borders. Marching too far ahead of the troops, according to the government's letter, would also not be useful if this would lead to the 'leakage' of prosperity, companies and thus also carbon emissions to other countries, despite the fact that Dutch policy will aim at an international approach.

388. This argument is, however, untenable.

389. By taking this position, the government denies that the reduction of CO_2 is primarily a *national* responsibility and obligation. This responsibility and obligation follows for instance from the text of the preamble of the UNFCCC and article 4 sub 2 of that treaty. The national responsibility does not prejudice the possibility of countries under the UNFCCC to join forces in a regional organisation such as the EU and to take on regional emission reduction obligations that are (re)distributed under the members of that region. However, reducing emissions is a national responsibility that cannot be made dependent on whether an international agreement is reached. On the contrary, the UNFCCC determines that countries listed in its Annex I need to take the lead in achieving emissions reductions. This obligation is in conflict with the refusal of the

Dutch State to take emissions reduction measures independent of an international agreement.

390. In the Potash Mines case as well, the liability of the French parties was set independently of the possible obligations of other parties that also used the Rhine for the discharge of waste. Urgenda c.s. are of the position that pro rata liability entails that each party can be addressed and held liable for its own part – no more and no less, and independent of the responsibility of other parties.

391. The Dutch State moreover seems to be of the position that taking a 'leading position' would have very little effect, because the potential benefits would 'leak' to other countries and would therefore be completely nullified.

392. Urgenda c.s. first of all find it somewhat inappropriate of a country that finds itself in the rearmost ranks of emission reduction efforts (as has been set out above) to take the position that no additional efforts can be asked of it because those efforts would be of no effect.

393. However, this defence (sometimes called the 'after you' defence) is also wrong in principle. This defence has also been addressed by the U.S. Supreme Court in the aforementioned case Massachusetts v. EPA of 2 April 2007 (**Exhibit 49**).

394. In that case, the defence argued that tighter emission standards in the automobile industry would only lead to marginal emissions reductions that would be completely nullified by rises of CO_2 emissions in China and India. The Supreme Court did not accept this argument as a ground for the federal EPA not to enact stricter emissions standards in the automobile industry. The U.S. Supreme Court found it to be indisputable that the emissions that were the subject of the case were substantial. It therefore found that reductions of those emissions would at least contribute to a slowing of the process of climate change, regardless of the possible rise of emissions in other countries. Or, as the U.S. Supreme Court put it:

'Its argument rests on the erroneous assumption that a small incremental step, because it is incremental, can never be attacked in a federal judicial forum. Yet accepting that premise would doom most challenges to regulatory action. Agencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop… While it may be true that regulating motor-vehicle emissions will <u>not by itself</u> reverse global warming, it by no means follows that we lack jurisdiction to decide whether EPA has a duty to take steps to slow or reduce it… <u>A reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere.</u>'

395. The defence by the government in its letter of 1 December 2012 is also false insofar as it argues that the emissions reductions demanded would inevitably lead to a loss of prosperity for the Dutch population.

396. A number of reports, such as the Stern report mentioned above, the World Energy Outlook 2011 and the IEA report of 2013 'Redrawing the Energy-Climate Map', show that postponement of mitigation efforts will only lead to a multiplication of the costs, even up to a factor of 4.

397. Moreover, the Dutch Environmental Assessment Agency has determined that the cost of (European) action in the absence of a global agreement would amount to approximately 0.8% to 1.5% of the Dutch GDP. This is approximately double what the Netherlands now spends on development aid, and about 1.5 times what was spent on development aid in the 1990s. Urgenda c.s. are of the opinion that it cannot be reasonably claimed that an investment of this size cannot be asked of the Dutch government. This is all the more so when these investments are set against the aforementioned benefits, the avoided higher costs of delayed action and the costs of damage caused by climate change. Not only will those costs be much higher (as has been set out in the Stern report), but climate change will also have consequences that cannot be expressed in merely monetary terms, such as the violation of the right to life (article 2 of the ECHR) and the right to an undisturbed private life (article 8 of the ECHR).

398. The delay of emissions reductions will therefore lead to much larger losses to prosperity when compared to the costs of taking adequate reductions measures, which from a scientific perspective are needed before 2020. The delay of emissions reductions benefits only the present generation, but it would lead to a quadrupling of the costs to future generations. Urgenda c.s. are of the opinion that the State has the obligation to ensure solidarity between generations by acting in a manner that is 'sustainable' in the long run as well. The State cannot afford to sit still when the interests of future generations are at stake and act as if '*après nous le déluge*'.

399. The defence by the Dutch State is that, in the absence of international agreement, the Netherlands ought not reduce its emissions unilaterally. This raises the question what actions the State would undertake in the scenario that international agreement is not reached or turns out to be insufficient to prevent dangerous climate change. Will the State in that case stick to the '*business as usual scenario*' and sit still while dangerous climate is becoming a reality in 2050 and temperatures reach a 4 degree increase before 2100 with all the consequences for life on earth that come with it, that science says will be catastrophic? The clear absence of an acceptable 'plan B' makes it evident that a '*you first*' defence such as that which is invoked by the State cannot be accepted.

400. Urgenda c.s. is of the position that the State cannot make its actions in this respect dependent on the coming into being of an international agreement, without answering the question what action it will take if such an agreement fails to materialize.

401. This is all the more the case now that it is far from certain that such an agreement that would be sufficient to stop dangerous climate change will ever come into being. It took for instance great efforts to agree to the Kyoto Protocol in 1997, despite this being a treaty that only held obligations for a limited number of countries, was limited in time, and did not reach the emissions reduction targets that are necessary from a scientific perspective. The negotiations for a new treaty that would bind all of the countries in the world are continuing, but it is far from certain that any substantial agreement will be reached in 2015 (the term that the parties to the UNFCCC have set for themselves), and that treaty in any case would not take effect before 2020. At the same time, reductions targets for 2020 are being set aside and are making place for talks about reductions in 2030. Once again, measures to address the problems are being postponed even though the parties involved realize that by the time that action is taken the problems will be greater and the costs higher. Moreover, why would a 2030 reduction agreement succeed when all substantial 2020 agreements have failed? With every delay, implementations of measures will be more complicated and more expensive, or possibly even unaffordable. Such circumstances could make the reaching of an agreement even more difficult than it has been so far.

402. In a letter of September 2013 (**Exhibit 50**), the State itself has urged the European Commission to propose an emissions reduction target for the EU of at least 40% before 2030. The Dutch Environmental Assessment Agency has calculated that this would translate to a reduction target for the Netherlands of at least 40-43%. The size of this reduction is thus larger than that demanded in these proceedings. In their letter, the State argues that a 40% reduction is necessary because the failure to substantially reduce emissions before 2020 has already resulted in the fact that the '*most cost-effective path*' towards 80-95% reductions before 2050 is no longer possible. This argument of the State can only be interpreted as an acknowledgement of the State that postponement will lead to greater costs.

403. Considering the State's recognition of both the dangers involved and the multiplication of costs, Urgenda c.s. do not see any legitimate ground upon which the State could oppose the award of the claim to reduce emissions by 40% before 2020. For this purpose, Urgenda c.s. also call to mind the passages above in which it was set out why this reductions target by 2020 is both necessary and urgent and why postponement of reductions is irresponsible.

9. Discretion of the State

404. It has thus been established that the known defences of the State are untenable.

405. More can however be said about these defences. In essence, they all proceed from the premise that the State still has a large amount of discretion when it comes to taking measures against climate change. The State seems to be of the opinion that the matter is an exclusively political matter, that politicians have a wide margin of discretion in deciding on this matter, and that a court needs to respect this discretion by only marginally testing its actions (or the lack thereof). In the United States, this line of thought is referred to as the 'political question' doctrine.

406. Urgenda c.s. acknowledge that granting the claim brought by Urgenda c.s. could have (great) political consequences. However, this is very often the case in the Dutch legal system. Judges frequently test (administrative) practices and laws that are the outcome of political compromise against rules that rank higher in the normative hierarchy, such as for example human rights. When a practice or law is then found to be in violation of these higher rules this logically entails political consequences. One example is the amendment of Dutch family law, particularly on the points of parentage and parental authority, on the grounds that it violated the ECHR. In Dutch administrative law as well, far-reaching changes had to be implemented (especially with regard to the position of the Council of State as highest court of appeal) and the "Crown appeal" (Dutch: *Kroonberoep*) against government decisions had to be abandoned due to incompatibility with the ECHR. In both cases, judicial decisions have had a great impact on the discretion of the political organs of the Dutch State to shape Dutch society according to their own political convictions.
This does not mean however that in those cases the court completely took over the role of political decision-making.

407. The fact that a judicial decision can have political consequences does not mean that courts are asked to make political decisions.

408. As an illustration of this, Urgenda c.s. wants to call attention to the judgement of a U.S. appeals court in a case in which applicants demanded the enactment of regulation that would lower CO_2 emissions in order to lessen the impact of climate change. On 21 September 2009, the United States Court of Appeals for the Second Circuit issued a decision in the case American Electric Power v. Connecticut (**see Annex 51**). The type of defence that is used by the Dutch State was also invoked in the American Electric case and was dismissed by the Second Circuit Appeals Court.

409. In its discussion of the 'political question' doctrine, the Second Circuit Court first describes the first-instance judgement of the district court. The district court had found that solutions to the CO_2-emissions problem are indeed global in nature and

based on considerations of national politics – such as the balance between environmental and economic interests – and that it was therefore the exclusive competence of politics to decide over this issue (at p. 31).

'It concluded that a solution to the problems created by carbon dioxide emissions must be global in nature and based on domestic policy considerations – such as the need to balance relevant environmental and economic interests and the possible impact on national security – and held that only the political branches are empowered to act in such a context.'

410. The Second Circuit Court however decided that neither the presence nor absence of legislation that is crafted by the political branch may prejudice the rights that the plaintiffs had under the 'federal common law of nuisance'. The plaintiffs did not have to wait for the political bodies to act, but rather could defend their rights in court independent of that process (at p.32-33):

'Similarly, the fact that the Clean Air Act (CAA) or other air pollution statutes, as they now exist, do not provide Plaintiffs with the remedy they seek does not mean that Plaintiffs cannot bring an action and must wait for the political branches to craft a "comprehensive" global solution to global warming. Rather, Plaintiffs here may seek their remedies under the federal common law. They need not await an "initial policy determination" in order to proceed on this federal common law of nuisance claim, as such claims have been adjudicated in federal courts for over a century.'

411. Urgenda c.s. want to put special emphasis on the conclusion of the court in which it stresses the ability of a court to decide in cases that (also) have political consequences (at p. 35):

'*Certainly, the political implications of any decision involving possible limits on carbon emissions are important in the context of global warming, but not every case with political overtones is non-justiciable. <u>It is error to equate a political question with a political case.</u>*
(…) Given the checks and balances among the three branches of our government, the judiciary can no more usurp executive and legislated prerogatives than it can decline to decide on matters within its jurisdiction simply because such matters may have political ramifications.' (emphasis added)

412. This conclusion, although of a U.S. court, also carries great value for the current proceedings. When confronted with the 'political question' doctrine the Second Circuit Court states that 'political questions' are not the same as 'political decisions'. The fact that a judgement might have political implications does not mean that a court cannot decide upon this question and must fully retreat in favour of the political branch of

the state. A legal question can and must be answered by a court when it is confronted with such a question. This is regardless of the fact that the answer to that legal question might have political consequences.

413. The relevant question in the current proceedings is therefore not whether the award of the claim filled by Urgenda c.s. might have great political consequences. The relevant question is whether Urgenda c.s. can ask this court to decide on a political question that requires the balancing of political interests. Urgenda c.s. is of the opinion that this is indeed the case.

414. The case that is put before this court involves transboundary nuisance and more specifically transboundary endangerment, due to the excessive emissions of greenhouse gases from Dutch territory. Urgenda c.s. hold the Dutch State liable for these facts on the basis of legal principles that were long ago developed and settled in the case law of civil courts. Plaintiffs have already pointed out the fact that the present proceedings have great resemblance to the Potash Mines judgement, the difference being that in that case the legal ground were limited to unlawful nuisance, while in the current proceedings the endangerment is of a magnitude that justifies the application of human rights (especially articles 2 and 8 of the ECHR) in the decision on the legality of the offending emissions.
All of these questions are legal questions.

415. Urgenda c.s. therefore echo the finding of the American court: the fact that the questions put before this court by Urgenda c.s. might have political implications does not change the fact that they are legal questions in their core. The presence of political implications does not change these 'legal questions' into 'political questions', nor do they require a merely marginal test by the court of the facts in question.
For this position, Urgenda c.s. also finds support in the fact that the Rotterdam court chose to decide and apply legal norms in the Potash Mines case, regardless of the fact that the Netherlands, Germany, and France had been negotiating on the issue for years, and its decision thus could potentially cause great political consequences.

416. In this connection, Urgenda c.s. wish to stress that its demands in essence do not require further political deliberations by the Dutch legislators. The reductions claimed by Urgenda c.s., based on the best available scientific knowledge, are urgent and necessary to prevent dangerous climate change. The Dutch State has accepted this science and has decided to (legally) commit itself to preventing dangerous climate change when it signed the UNFCCC. The Dutch parliament committed itself to the decisions made within the context of the UNFCCC by ratifying that treaty and accepted that these decisions are binding as an integral part of the Dutch legal system. A further deliberation on the basis of national political grounds as to whether

these decisions can be accepted is therefore no longer at issue, especially considering the matters that are at stake.

417. Urgenda c.s. in essence do not ask anything more than that which the State and parliament want and unconditionally have committed themselves to by signing the UNFCCC, which is now an integral part of the Dutch legal sphere.

418. In this connection, Urgenda c.s. moreover want to point out the fact that the 40% reduction target that lies at the core of its claim is considerably lower than the 80-90% reduction that the State itself continues to state is essential, be it in 2050. The fact that drastic reductions are not only necessary but also urgent has also been acknowledged and accepted by the State, for instance in the context of article 2 of the UNFCCC and the 2-degree boundary that has been defined within that article (see both the Bali Action Plan and the Cancun Agreement).

419. Urgenda c.s. therefore in essence do not claim anything more (and in fact even less) than that which the State itself wants and finds necessary. The only difference is that Urgenda c.s. demand that the state shall actually take those measures that it finds necessary and urgent – and to which it has already committed in agreements with other countries.

420. The larger question of discretion is therefore reduced to a much narrower and smaller one: whether the State can choose not to act upon that which itself, together with practically the entire global society, finds necessary and urgent to prevent dangerous climate change that will have catastrophic consequences for the lives of millions of people.

421. The same question was posed by the Advocate General to the Dutch Supreme Court, Professor J. Spier, in a contribution 'Civielrechtelijke aansprakelijkheid voor klimaatverandering: doemscenario's voor onverantwoordelijke bedrijven en overheden' (Civil Liability for Climate Change: Doom Scenarios for Irresponsible Companies and Governments), submitted to a publication on civil liability for the consequences of climate change *Klimaatverandering en de rol van het milieurecht* (Climate Change and the Role of Environmental Law), Vereniging voor Milieurecht (VMR) 2007-6, starting at p. 39. After referring to the 'business as usual' scenarios of the IPCC, Professor Spier concludes:

'… *to wait is fundamentally irresponsible. Although the planet will survive, it is not up to us to allow countless millions (and likely more than a billion) of future world citizens (and possibly also the current younger generation) to be exposed to all this misery*.'

Farther down (p. 43), he addresses the bearing of the government's political discretion on this topic:

'This argument is circular in nature. It presupposes that discretion exists, that the interests of future generations can legitimately be squandered, that the present prevails over the future and that we can lean back as long as China and India do not deliver their share.'

10. Conclusion

422. In this summons, Urgenda c.s. have attempted to avoid the use of big and heavy words as much as possible; to let the facts speak for themselves, and to only use those big words when quoting other sources. In this, Urgenda c.s. have shown self-restraint.

423. Urgenda c.s. do however think that the nature of the problem that is put before this court greatly justifies the use of very big words.

424. The urge to raise our voices to convince this court of the importance of the matter is great. This urge is fuelled by the fact that the extent of the danger and the interests at stake often surpass the mental ability to comprehend them, which all too often has led to a sense of resignation rather than a call to action. The first hurdle to be taken by Urgenda c.s. therefore is to overcome this already well-documented tendency to ignore the largest and gravest dangers in favour of the smaller and more tangible problems in our daily lives. Other more palpable and everyday concerns such as the budget deficit, the economic crisis and unemployment easily receive more attention and weight than the future perspective presented by the IPCC, which goes beyond our imagination. That future perspective is one with which we cannot identify, and because we are unable to connect to it, this perspective does not become part of our daily reality, or at least the way this reality is perceived. In other words, climate change has not yet been able to ´touch´ the greater part of the people.

425. The scientific reports of the IPCC need to be businesslike, scientific, and free of moral judgements, and they are therefore formulated in a sober tone. But any person who allows himself or herself to truly grasp the severity of the information contained in those reports and then looks around to observe the distressing lack of action and urgency cannot help but be filled with grave concerns. And if these concerns do not stretch to one's own lifespan, they certainly extend to the wellbeing of our children. The year 2050 is right around the corner, and our children are very likely to be around when 2100 arrives.
This grave concern is echoed in the reports of the World Bank and the International Energy Agency that have been referred to frequently in this summons. The fact that

such international organisations until now have had primarily an economic focus makes the message they send all the more forceful.

426. It is also against this background that Urgenda c.s. find it unacceptable that, in stark contrast with these international organisations, Dutch politics largely has chosen to ignore the warnings and the calls to action.
It is a grave failure of Dutch politicians that they have not put the issue of climate change front and centre of the political agenda or led and instigated a public debate about what needs to be done to safeguard our future and that of our children, while the seriousness and the nature of the problem are screaming for such a debate.
It is the task of politicians to attempt to assess what the future holds, to inform the public of the problems and dangers of climate change that scientists have identified, to lead a public debate about the challenges that these dangers involve, to stimulate the factual basis of this discussion and to alert the public of evidently false information, all so that a truly democratic decision-making process can take place. In this, however, the Dutch State fails in every aspect.

427. Other countries are making much more headway. The United Kingdom adopted a Climate Act and created a specialised Ministry of Energy and Climate. Germany is making great investments and efforts towards the *energiewende* (energy transition), to the extent that is has made Dutch gas-fired power plants uneconomical to operate. In stark contrast to this, the Netherlands appointed a 'climate sceptic' to comment on the works of the IPCC and gave the Dutch Environmental Assessment Agency and the Royal Dutch Metrological Agency (KNMI) the task of providing the arguments of climate sceptics with a scientific basis (Urgenda c.s. refer to the Nepperus resolution adopted by parliament and the execution of that resolution).

428. The climate issue is of such magnitude that creating awareness and public support are fundamental to being able to adopt and execute the necessary policy measures. Sadly, the Dutch political culture until now has been one of silence and misinformation when it comes to the climate problem. This is one explanation for the fact that the Netherlands are stumbling along at the back of the pack when it comes to reducing emissions. This while Dutch citizens belong to the group of largest *per capita* emitters and at the same time live in an area that is extra sensitive to the impacts of climate change due to its low-lying proximity to the ocean.

429. Urgenda c.s. are of the position that based on rational arguments and balancing of interests, there is no question about what needs to happen. We do however need to have the courage to accept that which has to happen, despite the fact that this might seem to go against some vested or short-term interests. Dutch politics has thus far not been up to that challenge. For this reason, Urgenda c.s. have found it necessary to turn to the legal system and to request the protection of their rights and interests before this court; asking this court to judge and declare that, on the basis of the

aforementioned grounds, the Dutch State has the legal obligation to do what it knows is necessary to protect the interests of its citizens.

430. Urgenda c.s. request that the rights of their children to a safe and stable future be protected and enforced. And Urgenda requests, on behalf of human society and all ecosystems, legal protection for the benefit of a sustainable and stable climate on earth.

11. Offer to further substantiate the facts

431. Urgenda c.s. have provided the proof to substantiate their claim in the annexes that are attached to this summons. A full overview is provided as **Annex B** to this summons.

432. Urgenda c.s. is of the opinion that by handing over the information contained in these annexes they have proven the facts proclaimed in this summons to a satisfactory extent. Urgenda c.s. however offer to further substantiate the facts, insofar as this is required under article 150 of the Civil Procedural Act, for instance by providing additional reports regarding the scientific evidence about the consequences of climate change to the Netherlands, as well as additional evidence regarding necessary reduction level, the substantiation of the reduction claimed. In this context, Urgenda offers to provide expert witnesses, including among others the scientists of the Postdam Institute in Postdam, Germany.

433. Without prejudice to this offer, Urgenda c.s. are of the opinion that based on the volume and weight of the evidence they have already provided, it is now up to the Dutch State to prove why, both in light of the law and the common good, it cannot be held to that which itself has acknowledged and is scientifically proven beyond any reasonable doubt to be necessary in order to protect the safety of Dutch society.

THEREFORE:

Requests this court to come to a judgement, provisionally enforceable to the extent possible:

1. Declaring that the Dutch State is acting unlawfully towards plaintiffs in the event it does not take appropriate measures, or have those measures be taken, to reduce the magnitude of greenhouse gas emissions in the Netherlands to a level of 40%, or at least 25%, below the level of 1990 before 2020;

2. Ordering the Dutch State to limit the magnitude of greenhouse gas emissions in the Netherlands, or have these be limited, to a level of 40%, or at least 25%, below the level of 1990 before 2020;

and at the least,
ordering the Dutch State to present to parliament within 6 months counting from the date of the judgement a program of measures with corresponding budgets, fully assessed and commented upon by the Dutch Environmental Assessment Agency (including a full calculation of all relevant societal costs and benefits, including the cost of carbon emissions) that would ensure the reduction of greenhouse gases in the Netherlands to a level of 40%, or at least 25%, below the level of 1990 before 2020.

Such including an order to pay the costs of the plaintiffs in this procedure, including the costs of legal advice and representation, all within 14 days after the judgement, or otherwise to the extent that this court finds justified.