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An das
Landgericht Essen

45117 Essen

Via Telefax in advance (excluding annexes)
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Claim

bySaúl Ananías Luciano Lliuya,
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx Departamento de Ancash,
Peru,

Claimant

Attorney of record: Rechtsanwälte Günther – Partnerschaft,
Mittelweg 150, 20148 Hamburg

against

RWE AG, represented through CEO Mr Peter Terium,
Opernplatz 1, 45128 Essen,

Respondent

in the matter of: Removal of derogation of property caused by global climate change § 1004 German Civil Code (BGB)

Value in dispute (§§ 2 et seq. ZPO): 21.000 €

In the name of and in full warrant of the claimant we request,

> **to determine that the respondent is liable, proportionate to its level of impairment (share of global greenhouse gas emissions), to cover the expenses for appropriate safety precautions in favour of the claimant's property from a glacial lake outburst flood from Lake Palcacocha.**

In case of implementation of the written procedure we request at present a decree of judgement of default, should the respondent not submit disposition to defence in time according to § 276 German Code of Civil Procedure (ZPO).

Substantiation:

The claimant is the legal owner of a house in the city of Huaraz, Péru. The estate is located at the foot of the Peruvian Andes. This property is acutely threatened by glacial melting which is a direct consequence of climate change taking place with an accelerated pace and to an increasing extent. The glacial lake, Lake Palcacocha, which is located above the city of Huaraz, is threatening to overflow at any moment due to risen water levels or glacial ice avalanches. The consequent flood wave would destroy or at least seriously damage the claimant's house.

The respondent is the parent company and owner of RWE group and the owner of different operating companies that discharged large amounts of greenhouse gases in Europe through electricity production and thus they have contributed to the anthropogenic greenhouse gas effect for decades.

Greenhouse gas emissions are being released by the subsidiaries of the respondent especially as consequence of coal firing. These emissions are to be attributed to the legal person of the parent company, especially because the decisions to build and operate these power plants are not based on the directorate of the subsidiaries but on the overall management of the parent company's directorate.

In § 1004 of the German Civil Code (BGB) it is stated: (1) If the ownership is interfered with by means other than removal or retention of possession, the owner may require the disturber to remove the interference. If further interferences are to be feared, the owner may seek a prohibitory injunction. (2) The claim is excluded if the owner is obliged to tolerate the interference.

The emissions of the respondent and its subsidiaries are not legally prohibited. Since 2004, they fall under the German Greenhouse Gas Emission Allowance

Trading Act (TEHG). They lead, however, to interference with the property of the claimant. He thus is entitled to removal of the interference with his property according to § 1004 of the Civil Code BGB. The respondent is a disturber according to § 1004 of the Civil Code BGB.

The norm also protects the claimant's property when it is located in a foreign territory.

The property is impaired by the greenhouse gas emissions caused by the respondent in line with § 1004 Civil Code BGB, more precisely by the change of the state of aggregation of the glacial ice located in the mountainous area above the claimant's property. The glacier loses stability because of the glacial melting which causes a higher risk of a glacial avalanche and thus makes it possible for a flood wave to emerge from the lake. Simultaneously, the water level of the lake rises which has a consequence that in case of a flood wave the water would rise above the moraine dam of the lake. The domicile of the claimant is thus exposed to an acute risk of a flooding. A glacial lake outburst flood is very likely to occur without protective measures and it would destroy or seriously damage the domicile of the claimant.

The claimant is not obliged to tolerate this impairment of his property.

A. Factual circumstances of the case

1.
Mr Luciano Lliuya is a natural person.

Annex K 1
(Copy "Documento Nacional de Identidad" attached as hard copy on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure)

He earns his living as farmer and mountain tour guide.

2.
His property is affected.

Mr Luciano Lliuya and his partner Ms Lidia Elena Loli Urbano are owners of an estate in the city of Huaraz (xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx) in accordance with Peruvian law, which is, as in Germany, based on a land register within public law.

Annex K 2
("Inscripción de Registro de Predios" - abstract from the land register - attached as hard copy on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure)

is the entry at hand is entry no. 11193284 in the land register regarding the urban estate at xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx Department of Ancash, with a property area of 103,88m^2.

Registered as owners are Mr Saúl Ananías Luciano Lliuya and Ms Lidia Elena Loli Urbano at the property ownership register, registry zone no. VII, office Huaraz, registry office Huaraz.

SUNARP refers to the Superintendencia Nacional de Registros Públicos, the land registry office, administrator is Mr Santos Richer Macedo Chávez.

In

Annex K 3
(Map, Location of Av. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx, Department of Ancash, attached as hard copy on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure)

the location of the claimant's estate is shown. This representation has been created on the basis of Google Maps.

The right of property is guaranteed in the Peruvian political constitution as well as in the Peruvian code of civil law.

The house the claimant and his Partner inhabit is situated on the property, see

Annex K 4
(Picture (Claimant with his father in front of the house) attached as hard copy on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure)

The claimant's estate is situated beneath Lake Palcacocha, from which the threat of flooding emanates. This lake is situated above the city of Huaraz at an altitude of approximately 4562 meters above sea level.

Annex K 5
(Map, Distance (in linear meters) Laguna Palcacocha - Huaraz, own documentation, attached as hard copy on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

The lake is located in the area of the Huascaran National Park, in the jurisdiction of public authorities. The park was established by decree of the central government in 1975 (http://legislacionanp.org.pe/parque-nacional-huascaran/).

3.
3.1
The surface of Lake Palcacocha has increased eightfold in less than 40 years, while its volume has grown 30-fold (see Table 1). It has grown disproportionately over the past 10 years, which is attributable to the increase in global temperatures. The water level of the lake is significantly higher than levels deemed 'safe' within the natural moraines that enclose the lake (see below).

Table 1: Historic Data, Lake Palcacocha

Year	Size (m^2)	Volume (m^3)	Max. Depth (m)
1972	66,800	579,400	14
1974	62,800	514,800	13
2003	342,332	3,959,776	14
2009	518,426	17,325,206	73

This data was taken from the study attached as

Annex K 6
(**attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure**)

from the University of Texas (Rivas, D. 2012. "Term report: Glacial lake outburst flood (GLOF). Palcacocha Lake, Peru." University of Texas at Austin. A report prepared for Geographic Information Systems course. p. 2).

It is a scientific examination of a possible GLOF from Lake Palcacocha. In summary, it concludes that there is a high risk of outburst flood and that an evacuation of Huaraz would not be possible due to extremely fast inundation.

The claimant is unaware of any more recent verified data.

A depth of 58 m and volume of about 7 million m^3 is considered technically safe. This would allow for the installation of a sustainable drainage system.

This follows from pages 25-27 of a study, see

Annex K 7
(**attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure**)

(Portocarrero Rodríguez, César A. 2014. The Glacial Lake Handbook: Reducing Risk from Dangerous Glacial Lakes in the Cordillera Blanca, Peru. Washington, DC: United States Agency for International Development.).

This 'safe' water level is affirmed by the Peruvian government along with the analytical data from 2009 by means of a 2012 emergency decree (No. 88-2012)

Annex 8a and 8b
(**attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure**)
Decreto Supremo que prorroga el Estado de Emergencia en la cuenca de la laguna Palcacocha, ubicada en la provincia de Huaraz, del departamento de Ancash, No. 088-2012-PCM.
Translated: "Supreme Decree concerning the declaration of a state of emergency due to Lake Palcacocha in the province of Huaraz"

The decree is attached in Spanish (Annex K 8a) with German translation (Annex K 8b). Only the directives have been translated, a translation of the reasoning however can be provided.

It explicitly reaffirms the numbers stated above as well as the increase in depth and volume of the lake since 1972:

> mostrando un desarrollo acelerado en los últimos 38 años, habiendo incrementado su volumen de forma notable, pasando de 514,800 m3 en el año 1972 a 17'325,206 m3 en abril del año 2009, presentando además taludes internos inestables, inconsolidados y fuertes pendientes, así como glaciares en estado colgantes, situación que puede

> 'which reflects a development within the past 38 years, in which the volume increased significantly from 514,800 m^3 in the year 1972 to 17,325,206 m^3 in April 2009. Furthermore, instable internal bank slopes are evident, which are insufficiently secured and steep slopes '

and also states that a safe volume of the lake is approximately 7 million m^3:

> ***OBJETIVOS DEL PROYECTO***
>
> ***Objetivo General:*** *Bajar el nivel de agua de la laguna Palcacocha en por lo menos 15 metros, con ello disminuir el volumen de agua de la laguna con fines de reducir el peligro inminente que representa para la ciudad de Huaraz*

(see p. 6).

'Objectives of the project

Overarching objective: To lower the water level of Lake Palcacocha by a minimum of 15 meters … in order to reduce the acute risk for the city of Huaraz.'

Objetivos Específicos:

- *Bajar el nivel del espejo de agua en forma preventiva mediante un proceso de sifonaje, con la instalación de seis líneas de tuberías para descargar un volumen aproximado de 7`000,000 m3 de agua de la laguna Palcacocha.*

(see p. 6).

"Specific objectives:
- To preventively decrease the water level of Lake Palcacocha … to a volume of approximately 7 million m^3."

As measured by the water level in 2009 (73 m) this would result in a safe depth of 58 m.

3.2
A GLOF mainly results from a simple inundation of the natural moraine dams – the water masses cannot be held back and thus run downstream into the rivers.

Moreover, the natural moraine dams are likely to break under consistently increased pressure. The probability of the risk of such flooding rises with the threat of falling glacier parts and rocks – equally caused by glacial melting – hitting glacial lakes and thus triggering a flood wave. This significantly increases the risk of a glacial lake outburst causing flooding.

The intensified melting of the glacier has led to an increase of the water volume of the lake to such an extent that the walls of the lake, the natural moraines, only exceed water levels for some meters and the natural drains do not suffice. A lake outburst and a resulting GLOF have become highly likely. At this point, a small piece of ice falling into the lake would be sufficient.

The risk of flooding has increased significantly in the course of the last years because the volume of the lagoon has "grown to a dangerous level" (p.6), see also

Annex K 9
(attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure)

Somos-Valenzuela, Marcelo A., Rachel E. Chisolm, Daene C. McKinney & Denny Rivas 2014. CRWR online report 14-01: Inundation Modelling of a Potential Glacial Lake Outburst Flood in Huaraz, Peru. Austin: Center for Research in Water Resources

This is a scientific study by the Center for Research in Water Resources at the University of Texas on the concrete consequences of a GLOF in Huaraz. The authors build their study on the risk evaluation of Lake Palcacocha:

> "Recently Lake Palcacocha has been declared in a state of emergency because its volume has again reached dangerous levels, threatening a flood that would quickly reach Huaraz causing major devastation and potentially loss of life." (p.1)

and they conclude that the city of Huaraz will suffer severe damage in the case of a probable flood.

Other authors define the risk of a GLOF as "high".

Annex K 10
(attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure)
(Hegglin, Esther and Christian Huggel, 2008. „An Integrated Assessment of Vulnerability to Glacial Hazards"
Mountain Research and Development, International Mountain Society)

Hegglin et al. explicitly state (p. 304) that the increased rates of glacial melting are caused by global climate change which hence increases the risk of a GLOF:

> "Global warming has a major impact on glacial and periglacial dynamics, resulting in changes of hazards throughout the world's mountain regions. For instance, glacier shrinkage can lead to the formation or growth of glacial lakes. In particular moraine-dammed glacial lakes often bear some considerable risk of lake outbursts, e.g. triggered by mass movements affecting the lake and producing impact waves and subsequent dam failure"

they go on to examine the risk from Lake Palcacocha.

In the beginning of 2013 the authority responsible for risk management in the Huaraz city administration issued a warning concerning a possible outburst of the glacial lake. The authority feared that in the event of a flood substantial amounts of water, mud, boulder as well as rocks and ice chunks could hit Huaraz, see

Annex K 11
(Attached only on CD , § 371 paragraph 1 p. 2 Code of Civil Procedure)
Perez, Inez 2013. „Glaciers: Meltwater catastrophes are forming in

the Andes." E&E Publishing, LLC. Accessible on http://www.eenews.net/stories/1059977803, retrieved last 17.9.2015.

Between 2009 and 2012, state of emergency was declared 11 times for the lake on request of the National Authority for Civil Protection INDECI (abbreviation: Instituto Nacional de Defensa Civil del Perú).

The most recent state of emergency declared was in September 2012 by the Peruvian President and the Peruvian Prime Minister (**Annex K 8a and 8b**)

This decree, however, does not provide relief: The statuary order allows emergency measures to be executed. However, the state of emergency is only temporary, and the danger of inundation cannot be (sustainably) decreased solely through the measures it allows for. At best, it can temporarily decrease flood risk – for instance by emergency drainage.

According to a 2015 study by the Peruvian National Authority for Civil Protection

Annex K 12
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure
INDECI 2015. *Laguna Palcacocha y su Impacto en los Distritos de Huaraz e Independencia, en caso de Desborde y Probable Aluvión – Departamento de Ancash*. Lima: Instituto Nacional de Defensa Civil. (June 2015)

persistent risk has been originating from the lake for the past years despite the decreed states of emergency. The probability of an outburst flood coming from Lake Palcacocha is estimated as „high" – „high risk" (p. 41).
On p. 58 it is explicitly stated:

> La Laguna Palcacocha es la laguna más peligrosa de la Cordillera Blanca, en cualquier momento puede darse un aluvión". La morrena es muy grande, pero consiste de material fácilmente erosionable, lo que la hace muy vulnerable al impacto de olas grandes resultantes de avalanchas o terremotos.

„The Palcacocha Laguna is the most dangerous Laguna of the Cordillera Blanca, an outburst flood could occur at any moment. "

5.
Should a flood occur as a consequence of the lake breaking out or overflowing, it would swell the downwards-flowing river Rio Cojup (further downstream it's the name changes to Rio Paria) to such an extent that the riverbed would not be able to hold the water masses.

The Peruvian Ministry of Health and the National Authority for Civil Protec-

tion recently determined that the street in which the estate of Mr Luciano Lliuya is situated would be especially affected by a possible flood. The estate is located in the flooding zone for which the authorities estimate a water level of over 3 meters after the water reaches its peak level and the largest flood waves have left Huaraz.

Annex K 13
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure
Danger map, Mapa de Peligros, Zonas de inundación ante aluvión, por desborde de la Laguna

This is a brochure by, among others, the National Authority for Civil Protection (Defensa Civil), which is titled "A flood can occur anytime". A map of Huaraz follows.

The map indicates the risk zones in Huaraz and divides them into "red", "yellow" and "green" zones. The red zone indicates areas where inundation of 3 meters would persist after the initial flood has drained. The property of the claimant is situated in this zone, south of Av. xxxxxx. The map also indicates safe zones as well as escape routes, none of which are located in the vicinity of the affected area.

The red square and arrow marks the location of the claimant's estate.

The flood would significantly exceed the capacity of the river Rio Quillcay and thus the flooding would expand throughout the city. Such flooding more intensively affects the streets situated close to the river. The street in which the estate of the claimant is located passes between the two rivers Rio Paria und Rio Auqui. At the entrance to the city these two rivers merge to form the river Rio Quillcay, which then flows into Rio Santa. The street is located in the eastern part of the city entrance (see **Annex K 3**).

Along the course of the rivers, as well as in parts of Avenida xxxxxxxx, the flood would reach a height of one to fifty meters, based on the scenario of a 56 meter deep breach in the lake's dam (see **Annex K 9**, page 45, figure 22). All neighbouring estates and houses, including the property of the claimant, would suffer absolute destruction or at least severe erosion. The wave that could hit the property of the claimant would reach a depth of six to eight meters.

Such danger was not imminent when the family purchased the estate decades ago.

6.
The claimant considers this danger an untenable impairment of his house. The immediate adverse effects on his property can take different forms. Flooding could have various concrete impacts on his property. Those impacts include

destruction of the property and house through flooding, mudslides or rubble carried by a flood.

The possible impairments of the house owner by such severe and long-lasting flooding should be known to the court. The static stability of his house would conceivably no longer be guaranteed.

A flood would at least entail substantial impairment of his living spaces.

7.
The impairment of the claimant's property by the acute risk of a GLOF has been laid out above. The underlying problem, namely the considerably increased volume of Lake Palcacocha, is at least partially attributable to anthropogenic climate change and is further aggravated by it every day.

7.1.
The existence of global climate change caused by increased concentrations of greenhouse gases such as carbon dioxide in the atmosphere is undisputed in Germany and is presupposed by the legislator, see

> § 1 TEHG
> The purpose of this law is, with regard to the practices specified in Annex 1 Part 2, through which greenhouse gases are emitted to a particularly high degree, to establish the basis for the trade of emission licenses for greenhouse gases in a community-wide emission trading system, in order to contribute, by means of a cost-efficient reduction of greenhouse gases, to worldwide climate protection. [Emphasis by the author]

and cannot be contested by the respondent, if they does not wish to contradict their own public statements, see the internet presence of the respondent

Annex K 14
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure
accessible on:
http://www.rwe.com/web/cms/de/1498198/rwe/verantwortung/umwelt/
retrieved last 03.11.2015

Since the respondent fully recognizes the impact of their actions and has resolved the following: "We aim to generate climate neutral power by 2050." (**Annex 14**) A statement of this sort would be incongruous if the respondent did not acknowledge a causal relationship between CO_2 emissions from power generation and global climate change.

In the claimant's view this constitutes an obvious fact pursuant to § 291 ZPO.

7.2.
Global climate change is also responsible for the local problem and the increasing risk of a GLOF. This section elaborates the specific causality between the respondent's emissions and the impairment of the claimant's property.

The assertions are based on statements by the Intergovernmental Panel on Climate Change (IPCC), the expert body that regularly compiles observations and projections by recognized climate scientists, and which is acknowledged by both the international community and the German Federal Government. It was founded in 1988 and, since 1990, has published five so called 'Assessment Reports' on the extent and consequences of climate change in the future, the most recent being from 2013/2014.

Herein a distinction must be made between observations of changes, for example in global or regional temperature levels, the matter of attribution to the anthropogenic greenhouse effect, and the either original or comparative projections performed by the IPCC on the scope and impact of climate change in the future.

The claimant does not rely on the latter, namely projections (which would be highly dependent on emission trends in the coming years); he rather asserts that already at this current time his property is endangered by global greenhouse effects by being exposed to the acute risk of flooding.

The Assessment Reports of the IPCC (here: "5th Assessment Report") are subdivided into reports by the working groups. Of particular relevance in this case is Working Group I (WG I – Climate Change 2013: The Physical Science Basis) for scientific basis and observations.

Annex K 15
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

and Working Group II (WG II – Climate Change 2014: Impacts, Adaptation and Vulnerability) on impacts of climate change.

Annex K 16
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

All reports and supporting documents are available on the official Internet presence: www.ipcc.ch.

It should be noted that:

With regard to assertions made beyond what is directly measurable (such as: temperature curves on the basis of measurements), the IPCC routinely presents

results as the probability or certainty of the assertion ("Likelihood", "Confidence").
These indicate the probability of the occurrence of single events or effects. "Very likely", for example, characterizes the second-highest level of probability. The occurrence of the respective event or effect has a 90-100% probability.

Annex K 17
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure
(See Mastrandrea M. D. et al. (2010). Guidance note for lead authors of the IPCC fifth assessment report on consistent treatment of uncertainties. Intergovernmental Panel on Climate Change (IPCC), Table 1.)

as well as

Annex K 18
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure
Summary for Policymakers (https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WGIAR5_SPM_brochure_en.pdf), p. 2.

As there are no linear causalities in climate science, and any assertion about the highly dynamic climate system is only verifiable by way of models and statistics, other 'secure' statements are in principle not possible.

This type of statement, in the opinion of the claimant, does however not differ from specialist appraisals based on general expert experience, which are generally also admissible in civil proceedings. On the topic of global climate change and local impacts, this 'experience' and expert knowledge is supplemented, but not substituted, by climate modelling.

7.3.
Greenhouse gas emissions cause the global temperature increase, which is also observed locally and is attributed to climate change.

> 'More than half of the observed increase in global mean surface temperatures from 1951 to 2010 is due to the observed anthropogenic increase in greenhouse gas (GHG) concentrations.' (*high confidence, very likely*).
> IPCC 5th AR, WG I: p. 932, **Annex K 15**).

The effects of heightened concentrations of greenhouse gases in the atmosphere are delayed.
Glaciers worldwide are retreating partly due to increases in local temperature levels.

For the northern and central part of the Peruvian Andes, over the period from 1961-2009 a temperature increase of between 0.2 and 0.45% per decade has been recorded. (IPCC 5th AR, WG II: p. 1507, Table 27.1, **Annex K 16**)

The retreat of the tropical glaciers has been accelerating, especially since the late 1970s.

> 'Tropical glaciers' retreat has accelerated in the second half of the 20th century (area loss between 20 and 50%), especially since the late 1970s in association with increasing temperature in the same period (Bradley et al., 2009).' (IPCC 5th AR, WG II: Chapter 27, p. 1520, **Annex K 16**)

This trend was recently also confirmed for Peru, among others, with "high confidence".

> 'A rapid retreat and melting of the tropical Andes glaciers of Venezuela, Colombia, Ecuador, Peru and Bolivia has been further reported following the IPCC AR4, through use of diverse techniques (*high confidence* based on *high agreement* and *robust evidence*)' (IPCC 5th AR, WG II: Chapter 27, p. 1518-1520, **Annex K 16**)

The qualitative confidence level in this assertion by the IPCC team of authors is hence "very high".

Glacial melting in the Andes and particularly in the Cordillera Blanca is well-documented. It is among the phenomena that can be attributed to human influences.

> '[The] [r]eduction in tropical glaciers and ice fields in extratropical and tropical Andes over the second half of the 20th century … can be attributed to an increase in temperature (...).' (IPCC 5th AR, WG II: Chapter 27, p.1543, **Annex K 16**)
>
> There is a „*very high* degree of confidence in the attribution" of climate change to the glacier retreat in the Andes in South America.

This is illustrated in the Fifth Assessment Report (IPCC 5th AR, WGII: Chapter 27, p. 1544, Table 27.8, **Annex K 16**):

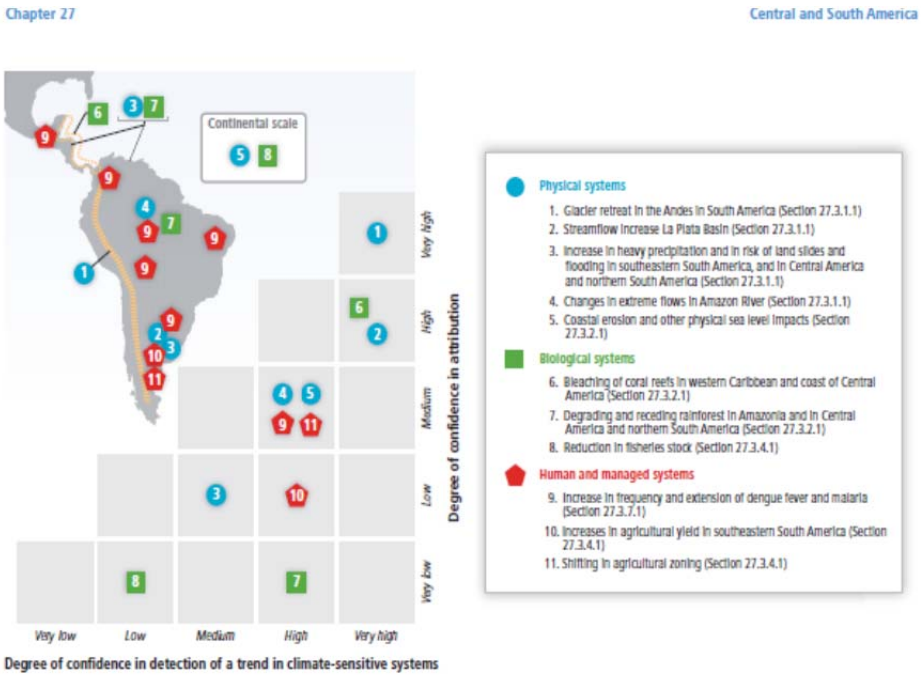

Figure 27-8 | Observed impacts of climate variations and attribution of causes to climate change in Central and South America.

The numeral 1 designates glacial melting in the Andes in South America, and thus in Peru. The probability that global climate change is responsible for it is rated as 'very high'.

Only recently a report by the Peruvian government documented that climate change, in the last 40 years, has diminished the Peruvian glaciers by 40%, and that the melt water released thereby has resulted in the formation of approximately 1000 new lakes (see also IPCC 5th AR, WG II: Chapter 18, p. 984).

Annex K 19

Reuters (2014). „Peru says country's glaciers shrank 40 pct in 4 decades from climate change." 15 Oct 2014. Accessible on: http://www.reuters.com/article/2014/10/15/peru-climatechange-glacier-idUSL2N0SA39P20141015, retrieved last: 17.09.2015.

The number in size of the lakes has, in fact, increased due to the melting of the mountain glaciers caused by climate change, see also: IPCC 5th AR, WGII: Chapter 18, p. 984, Annex K16.

The Cordillera Blanca, the section of the Peruvian Andes in question, has lost 27% of its area since 1970

Annex K 20

Inventario de Glaciares del Perú, Ministerio de Agricultura y Riego/Autoridad Nacional del Agua, Unidad de Glaciología y Recursos Hídricos, Huaraz, Juli 2014, p. 23, point 7.1.3.1.:

> Comparando la superficie glaciar registrada en el inventario nacional de la década de 1970 [3] y los resultados del inventario actual, la Cordillera Blanca ha perdido aproximadamente el 27% (195,75 km^2) de su área glaciar total.

"Comparing the glacier surface area measured in the national inventory of the decade of the 1970s [3] and the results of the current inventory, the Cordillera Blanca has lost approximately 27% (195,75 km^2) of its total glacier area."

7.4.
Therefore global climate change is concretely contributing to the melting of the glaciers whose melt water is released into Lake Palcacocha.

Without anthropogenic greenhouse effect the glaciers would not melt as fast, the water surface would not be as high as it currently is. Furthermore the risk of growlers breaking off and causing devastating floods would be less high. The overall situation for the inhabitants of Huaraz below the lake might be reasonable.

To the extent to which this scientific statement is possible, the glaciers would not have melted as rapidly without the anthropogenic greenhouse effect.

Evidence, if necessary: **Expert witness, climate scientist e.g. Dr. Stefan Rahmstorf, Potsdam Institute for Climate Impact Research (PIK), Postbox 60 12 03 , 14412 Potsdam**

8.
The respondent is the parent company of a corporation that is widely ramified under corporate law. Since the company was founded in 1898, RWE has through its business operations significantly contributed to an increase in greenhouse gas concentration in the earth's atmosphere, a phenomenon which leads to a steady increase in surface temperatures and therefore also causes glacial melting.

As the owner of the operating companies, the respondent is the largest emitter of greenhouse gases in Europe.

8.1.

The respondent, the RWE AG, founded in 1898 as the "Rheinisch-Westfälisches Elektrizitätswerk AG", is a publicly listed electricity and gas supplier based in Essen.

The respondent is organized along a parent company scheme and with a complex structure subdividing it into numerous subsidiaries and sub-subsidiaries. According to the extract from the commercial register

Annex K 21
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

the respondent "manages" these companies.

Business priorities lie in the areas of distribution and supply networks (RWE Deutschland AG), power generation (RWE Generation AG), and operation of power plants and facilities (RWE Power AG). Coal and lignite are the fuels with the largest share in power generation.

For the purpose of power generation, fuels are extracted or imported, and power plants are operated for the burning of fuel materials.

Through power generation, as well as in part through the precursory processes, climate-damaging greenhouse gases are emitted into the atmosphere.

The power generation facilities are subject to authorization. The operators of the facilities in accordance with the Federal Emission Control Act (independent legal entities) are controlled or were founded by the respondent or its legal predecessor. The emission of greenhouse gases has long been known to be the inevitable and damaging consequence of power generation from fossil fuel sources.

The respondent's internet presence
http://www.rwe.com/web/cms/de/1904186/rwe/verantwortung/klimaschutz/
for which the respondent (RWE AG) indicates its responsibility in the imprint

Annex K 22
(Imprint and Printout with Quotations)
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

contains, inter alia, the following statements:

> "Our objective is to reduce our CO2 emissions relative to the generated amount of electricity and in absolute terms (…). These form part of our responsibility to the community and we have a duty to reduce our high

level of CO2 emissions during electricity generation, which are well above average compared with our competitors."

The respondent, RWE AG, explicitly terms itself "Europe's largest single emitter of CO_2"; a printout of the respective page from the respondent's internet presence is attached as **annex K22**)

Throughout, with regard to climate responsibility, the respondent speaks for all of its subsidiaries.

As early as 1995, the respondent took responsibility for the parent company as a whole, when, in the "Declaration of the VDEW on Climate Protection", it declared to "(…) reduce CO_2 emissions until 2015 by 12.5 percent compared to 1990". See Environmental Report (2000) of the respondent,

Annex K 23
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

https://www.rwe.com/web/cms/mediablob/de/610340/data/316928/1/rwe/verantwortung/berichterstattung/aktuelle-berichte/archiv-cr-berichte/umweltbericht-2000.pdf

8.2.
The share of RWE AG and its legal predecessors in global historic emissions, i.e. its share in global total emissions from 1751 to 2010 is about 0.47%. This specification of the relative emissions by RWE stems from the 2014 study "Carbon Majors: Accounting for carbon and methane emissions 1854-2010 – Methods & Results Report" by Richard Heede.

Annex K 24
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

Table 2 was sourced from this **Annex K 24** (p. 22, 27, 29): Historic emissions for RWE

Emissions (in MtCO2e) *2010*	**Coal produced (in Mt)** *1965-2010*	**Emissions (in MtCO2)** *1965-2010*	**Diffuse methane emissions** *1965-2010*	**Total emissions** *1965-2010*	**Contribution to total emissions** *1751-2010*
148	4,717	6,31	0,54	6,84	0,47%

For the period 1990-2014, the underlying data from the study by Heede (Annex K24) as well as the data by the Global Carbon Atlas (a public web-resource available on www.globalcarbonatlas.org) reveals that the emissions by RWE

AG constitute 0,45% of global and 14,06% of German emissions. However, this data only relates to lignite which means that the actual share would be even higher.

From the annual report 2014 of the respondent, attached as

Annex K 25
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

The following figure is excerpted (p.44), according to which in 2013 163,9 million tons of CO2 had been emitted and in 2014 155,2 million tons of CO2.

Emissionsbilanz der Unternehmensbereiche[1]	CO_2-Ausstoß	
In Mio. Tonnen CO_2	2014	2013
Konventionelle Stromerzeugung	145,2	153,5
Davon:		
Deutschland[2]	116,1	125,7
Niederlande/Belgien	12,3	8,9
Großbritannien	15,7	18,9
Türkei[3]	1,1	–
Zentralost-/Südosteuropa	6,5	6,5
RWE-Konzern[4]	**155,2**	**163,9**

In the reporting year 2013 the carbon emissions of the RWE AG thus constitute 0,45% of global and 21,95% of German greenhouse gas emissions - based on the data of the global carbon atlas (http://www.globalcarbonatlas.org).

9.
The consequences of climate change felt by the claimant can be averted or at least effectively mitigated by the implementation of protective measures.

The single most effective risk-reducing measure is the reduction of the levels through drainage of the lake from which the acute danger emanates.

This measure has the purpose of reducing the volume of the lake as well as regulating the outflow of water. This is comprehensively detailed in **Annex K 7** (Portocarrero), pp. 25.

The technical report was commissioned by the United States Agency for International Development (USAID) and serves as a summary of the experience and expertise gathered in Peru on the prevention and management of glacial lake outburst hazards.

The total costs for draining Lake Palcacocha according to expert appraisals are estimated at 4,000,000 US-Dollars (**see Annex K 7** (Portocarrero), p.26), which is equivalent to roughly 3,500,000 Euros.

RWE should be obliged to cover part of the costs, however, on a pro-rata basis, as RWE is merely co-responsible for the impairment of the claimant.

A final estimation of the total costs is missing; therefore the claim refers only to the determination of the respondent's liability. Considering the above mentioned shares and the total costs of the measure, the share of the respondent would amount to 17.000 €.

10.
In public media and in political debates, both in Peru and internationally, it is said that global climate change is a global environmental problem, which can only be handled via joint goals and activities.

The claimant notes that, since the implementation of the UN climate convention of 1992, no protective measures have been taken that would guarantee his safety or the integrity of his property. Greenhouse gas emissions continue to rise globally.

The claimant will not and cannot wait longer for protective measures to be decided at the political level and is in any case not prohibited from taking legal action.

The claimant had already asserted his claim against the respondent as early as March 2015, who, however, rejected it as fundamentally unsubstantiated. Therefore, taking legal action was necessary.

B. Statement of Grounds

I. Jurisdiction and Applicable Law

1. Jurisdiction of the Court

The regional court of Essen has jurisdiction over the legal dispute, according to § 63 (1) in conjunction with § 4 (1) of EU Regulation No. 1215/2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (OJEU L 351, p. 1) due to the general place of jurisdiction of the respondent company territorially and thereby internationally, and materially in accordance with § 1 Code of Civil Procedure (ZPO) in conjunction with § 23 No. 1 and § 71 paragraph 1 Judicature Act (GVG).

The respondent, a company based in Germany, and the greenhouse gas emissions which are relevant in this case, are primarily emitted by plants in Germany.

2. Standing to be sued
The respondent has standing to be sued and is the proper respondent of the claim, in accordance with § 31 German Civil Code (BGB).

§ 31 German Civil Code is applicable to any and all legal persons under civil law. For publicly limited companies, limited liability companies and cooperatives, this has been "determined by undisputed jurisprudence" (see Münchener Kommentar zum BGB, 7th Ed. 2015, § 31, recital 11).

The respondent is the parent company of a multitude of corporations, who are in turn operators of facilities in accordance with the Federal Emission Control Act (BImSchG) and are consequently materially responsible for the emission of the greenhouse gases. The respondent itself does not operate any facilities. Nonetheless, the emissions of its subsidiaries are attributable to the respondent, and it also declares itself responsible, as elaborated above.

In the reporting year 2009, 71 power plants are attributable to the respondent via its subsidiaries; two thirds of the greenhouse gas emissions occur within Germany. Die individual facilities are listed in

Annex K 26
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

by their location and share of emissions. More recent detailed data was not accessible to the claimant, but these are also not required in light of the data on total emissions already submitted.

In Germany the power plant are predominantly operated by the fully owned subsidiary RWE Power AG, as for instance in Niederaußem and Neurath.

The share structure is enumerated in the annual report of 2014 (Annex K25), p. 191:

I. Verbundene Unternehmen, die in den Konzernabschluss einbezogen sind	Beteiligungsanteil in %	
	direkt	gesamt
RWE Power Aktiengesellschaft, Köln und Essen	100	100

In the United Kingdom the power plants are assigned to the RWE Npower plc, which in turn is owned to 100% by the respondent, according to the annual report of 2014 (Annex 25), p. 190.

RWE Npower Group plc, Swindon/Großbritannien		100

The respondent is therefore a disturber within the meaning of § 1004 German Civil Code; it in practice controls the greenhouse gases of the operating companies belonging to the parent company.

Evidence, if necessary: Hearing of the party
Submission of the domination agreements (only possible by the respondent, secondary burden of proof)

It is also to be considered that:

The construction and operation of the power plants are not based on decisions by the subsidiaries. They are rather subject to the decisions of the respondent parent company. The subsidiaries' scope of responsibilities relates primarily to the manner of implementing decisions by the parent company. The greenhouse gases emitted by electricity generation from coal, which lead to global warming and to the impairment of the claimant's property, are an unavoidable consequence of electricity generation from the combustion of fossil fuel sources. The respondent is consequently bears liability (besides its ownership position) for their own actions when these violate the scope of protection of a third party's property.

Regarding the respondent's status as a disturber within the meaning of § 1004 German Civil Code, see II. 3. below.

3. Applicable Law

In a legal proceeding with a foreign element, in this case with a foreign claimant, establishing the applicable law is imperative.

The claimant invokes German law on the basis of the provisions of the international law on the conflict of laws according to the Rome II Regulation (Regulation (EC) No. 864/2007 of the European Parliament and of the Council on the law applicable to non-contractual obligations (Rome II), OJEU 2007 L 199, p. 40).

3.1.

According to Art. 4 Rome II the place of the damaging event is the object of reference. This would be Peru. However, Art. 4 Rome II is only applicable when no particular point of reference for Art. 5-9 Rome II exists. Pursuant to Art. 7 Rome II a particular point of reference is the place of the environmental effect:

> Art. 7: "The law applicable to a non-contractual obligation arising out of environmental damage or damage sustained by persons or property as a result of such damage shall be the law determined pursuant to Article 4(1), unless the person seeking compensation for damage chooses to base his or her claim on the law of the country in which the event giving rise to the damage occurred."

The material scope of applicability encompasses not only environmental effect in a narrow sense, such as the impairment of water, soil, air, ecosystems and species, but also claims for compensation for personal injury or material damages.

According to recital No. 24 to the Rome II Regulation, environmental damage is any adverse change in a natural resource, as air or water (which corresponds to the definition in Art. 2 Directive 2004/35/CE, "Environmental Liability Directive").

The emission attributable to the respondent are already causing an "adverse change" through the increase of greenhouse gas concentrations in the atmosphere. Additionally they contribute to a change in the aggregate state of the glacial ice above Lake Palcacocha, which in turn leads to the change in the lake's water level and the resulting hazard. An environmental damage in the meaning of Art. 7 Rome II is given; furthermore (impending) material damages exist due to that damage.

This is a typical "Distanzdelikt". These are types of offences where the place of the act and the place of the damage are different (Münchener Kommentar zum BGB, 2015; on Art. 7 Rome II, recital 21). Herein the option right holds in favour of *lex loci actus*.
Claims for injunction and removal against environmental damages are qualified under tort law in the context of the Rome II Regulation. As Art. 44 Introductory Act to the German Civil Code (EGBGB) reference the provisions of the Rome II Regulation (with the exception of Chapter III – unjust enrichment, etc.), by which the legislator intended to affect an equal treatment of the tort protection statute and the immission protection statute (Münchener Kommentar zu Art. 44 EGBGB, 2015, recital 1), the applicability of the Rome II Regulation is given. Art. 44 EGBGB states:

> 'As to claims arising from adverse impacts that proceed from a plot of land, the provisions of Regulation (EC) No. 864/2007 except for chapter III shall apply mutatis mutandis.'

This is about such adverse impacts, though of oblique quality.

This finding is further underscored by the judgement of the Federal Court in a related matter (jurisdiction). The Federal Court ruled that Art. 5 No. 3 Brussels I Regulation (Council Regulation (EC) No 44/2001, "delict or quasi-delict") is

to be applied to § 1004 German Civil Code, so that equal treatment is given (Federal Court, judgement from 24.10.2005 – II ZR 329/03 juris).

3.2.
The Rome II Regulation is also applicable in the temporal sense.

Accordingly, the event giving rise to the damage must have occurred after the regulation came into force, since the regulation, according to Art. 31 in conjunction with Art. 32 Rome II Regulation, only applied to events having occurred after 11.01.2009 (Münchener Kommentar zum BGB, on Art. 32 Rome II, recital 6). In the present case there is no singular event giving rise to damages, but rather a chain of damaging events, which began before 11.01.2009, but has continued on beyond that point (concerning continuing offences see Münchener Kommentar, Art. 32 Rome II, recital 6).

Furthermore, at a point in time January 11, 2009, an application of German law according to the regulations of the EGBGB would have been appropriate (Place of action or Right of choosing of the affected. The necessary parallel application of collision right on unlawful action in §1004 BGB has already been described by Stoll in 1973. The protection of property rights in international private law, Rabels Zeitschrift für ausländisches und internationales Privatrecht, 1973, S. 357-379).

4. Definiteness of the claim
The present claim is sufficiently definite.

Presently it must be taken into account that, while the requirement of definiteness stated in § 253 paragraph 2 No. 2 Code of Civil Procedure requires an unambiguous head of claim, in applying § 1004 paragraph 1 German Civil Code, the disturber must be left with a choice between multiple ways of removing the disturbance (see Münchner Kommentar BGB, 6th Ed. 2013, § 1004, recital 231).

The jurisprudence in cases of such constellation underlines the disturber's right to choose, so that the head of claim is to refer to the impairment that is to be removed. Specific remedies are to be named when others do not come into question at present, for instance when others are unfeasible or must sensibly be ruled out (cf. concerning this issue Münchner Kommentar BGB, 6th Ed. 2013, § 1004, recital 305 ff. with reference to relevant recitals).

According to these principles, in the claimant's opinion, it is not in his best interest to invoke the primary injunctive relief. This is because the desistance of the respondent from future greenhouse gas emissions alone will not remove

the impairment of the claimant's property, and the past emissions cannot be retracted by the respondent.

Should the court nevertheless find this head of claim too indeterminate pursuant to these principles, according notification is requested.

II. Claim based on § 1004

The claimant has a claim against the respondent to the removal of the impairment of his property through the impending glacial lake outburst flood by way of § 1004 paragraph 1 sentence 1 German Civil Code.

> (1) If the ownership is interfered with by means other than removal or retention of possession, the owner may require the disturber to remove the interference. If further interferences are to be feared, the owner may seek an injunction.
>
> (2) The claim is excluded if the owner is obliged to tolerate the interference.

There is a shortage of jurisprudence to dogmatically elaborate the norm. To exemplarily cite *Baldus*:

> 'In the last decades the (fairly sprawling) debate over the correct understanding of § 1004 has concentrated on a systemic question and paradigmatic problem of application: Does the norm grant structurally tort-like protection of property (only without fault), as the formerly prevailing opinion and the case law still state? Or is it directed against the unlawful over-expansion of one's own protected legal sphere at the expense of others (usurpation theory, by now the prevailing theory)? Does the impairment therefore require – quoting a central phrasing – "not only a loss on the part of the injured party, but additionally a corresponding benefit on the part of the disturber"? (Münchener Kommentar zum BGB, 2013, § 1004 recital 3)

The signatory is aware of no case in German or European jurisprudence that might be comparable to the present one, particularly not with regard to the phenomenon of climate change.

The present case falls into the scope of application of § 1004 German Civil Code.

For:

The respondent, through their subsidiaries, has been emitting greenhouse gases continuously for decades. It has also known of the effect of these gases for

decades and nonetheless emitting those serves as the basis for its business operations. These emissions are, to begin with, neither forbidden, nor do they cause an impairment of the property of a third party. Through the accumulation of the greenhouse gases however, an increase of the average temperatures in the area of the glaciers, and therefore by extension an unacceptable impairment, occurs.

The claimant demands – to avert damages – the removal of the impairment, namely the risk of flooding.

This claim is *not* a claim of compensation for damages and also does not signify a breach of the system of strict liability and fault-based liability – it is rather based on the same conflict also assumed by the legislator, namely that one party's use of its property leads or contributes to an unacceptable impairment of the other party's property.

The occurrence of damage is to be prevented by the claim from § 1004 – this is precisely the aim of the claimant.

Concurrently *Herrmann* (Der Störer nach § 1004 BGB, 1987, p. 477), for instance, advocates that also in cases of remote effects of (cumulative) emissions there is a liability according to § 1004, as long as no restoration of materially damaging infringement is demanded. As long as the protection of property stands as a bounding bracket, there is "no need" to "restrict the liability through theories of causation" (p. 478).

In particular:

1. Property
The threatened residence is owned by the claimant (see above Annex 2, land register entry with apostille).

§ 1004 is also to be applied to impairments of property outside of Germany.

In international property law, generally the principle of *lex rei sitae* is applied, i.e. regarding the applicable law of the state, in which the object of the matter at hand is located
(Art. 43 Abs. 1 EGBGB; Kegel/Schurig, Internationales
Privatrecht, 2000, S. 661).

The general predominance of *lex rei sitae* serves primarily as a protection of legal communication: The state in which the matter is located is easiest to determine for all involved parties, and the applicability of its law corresponds most to their expectations (Münchener Kommentar zu Art. 43 EGBGB, 2015, recital 3).

Presently, however, the definition of property law, or of the property itself (which indisputably is given, and for which evidence was submitted) is not concerned, but rather the *impairment* of property through the mediate influence of another party. Regardless of the fact that also Peruvian law provides for the protection of property, Art. 7 Rome II Regulation is therefore to be observed, pursuant to which German law is to be applied. Concerning this, see above.

2. Impairment
The threatening flood as a consequence of the glacial meltdown constitutes an impairment of the claimant's property in a different way than a deprivation or a withholding of the property. An impairment of property within the meaning of § 1004 German Civil Code is, according to settled case law, any condition that conflicts with the substance of the property (see Federal Court, Neue Juristische Wochenschrift 2007, 432).

2.1.
According to the case law the impairment has to consist in a "positive" impairment. Such an impairment is present; in particular, the so-called *cold air pool* case (Federal Court, Neue Juristische Wochenschrift 1991, 1671) does not lead to the exclusion of an impairment in the legal sense here. In the so-called cold air pool case the Federal Court propounded that the prerequisite for a positive influence would be "the channelling of sensorily perceptible substances" from the property of the respondent onto the property of the claimant and would explicitly not be given when the influence stemmed from natural effects.

The impairment of the claimant's estate is the consequence of an active external influence, the enrichment of the atmosphere with GHG emissions for which the respondent is partly responsible. The impairment of the claimant's estate is hereby endangered due to the glaciers' lessened stability and the rise in water surface level in the glacial lake, situated above the claimant's estate, caused by rising global temperatures. The endangerment is therefore a result of a chain of causation (co-) started by the respondent's action.

A "negative impact" does not exist. As *Herrmann* (Natureinflüsse und Nachbarrecht, NJW 1997, 153/155) states correctly, it is the goal of negating responsibility.

2.2.
The emissions can also be traced back to a "human responsibility".

Presently the source of the disturbance lies in the lake, the water level of which is steadily rising and thereby poses an imminent danger of flooding (impairment). The danger however precisely does not trace back to the natural state of the lake or of the glaciers, from whose ice the lake is sourced. The rapid rising

of the lake, which constitutes the impairment through the tangible threat of flooding, has an anthropogenic cause in climate change.

As elaborated comprehensively above, at the current state of knowledge, there remain no reasonable doubts that the current warming of the climate is caused by the emission of greenhouse gases, especially carbon dioxide, by humans. Further, above it was delineated and evidence was proffered that the glacial melting is also to be ascribed to global warming and does not constitute a natural phenomenon.

The global and local warming is traceable to human greenhouse gas emissions; precisely this is the subject of the observations by the IPCC, see above.

This was recently, for instance, confirmed by the regional court of The Hague (Az: ECLI: NL: RBDHA: 2015: 7196, verdict from 24-06-2015, Az. C/09/456689 / HA ZA 13-1396 (English translation)) in the case of *Urgenda*. Herein it is stated, inter alia:

> "4.18.
> The aforementioned considerations lead to the following intermediate conclusion. Anthropogenic greenhouse gas emissions are causing climate change."

The verdict is attached in the original Dutch and as an English translation from the database of the courts in the Netherlands (http://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2015:7196)
as

Annex K 27 (Dutch)
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

Annex K 28 (English)
attached only on CD, § 371 paragraph 1 p. 2 Code of Civil Procedure

A German translation can be submitted at a later point.

In principle the Federal Administrative Court has also already determined this (Federal Administrative Court, ruling from 30.6.2005 – 7 C 26.04) by designating the restriction of the freedom of practicing an occupation as a necessary consequence of the lawfully pursued goal of reducing greenhouse gas emissions in the interest of climate protection.

A human responsibility for the imminent danger of a glacial lake outburst flood is therefore given.

2.3.
As § 1004 German Civil Code regulates injunctive relief for the purpose of preventing a damage, it is inherent to the norm that the risk of a damage or a danger also constitutes an impairment in the sense of the law.

In part, the recognized "present impairments" are differentiated from merely preparatory measures, or merely abstractly endangering measures. According to this, the presentness is affirmed when the measure or the condition inevitably must lead to an impairment (see, for instance: BeckOK BGB, Edition 35 from 2015, § 1004 recital 50; see also: Staudinger-Gursky, BGB, 12th Ed., § 1004 recital 154 with further references).

The presence of impairment was affirmed, for instance, in the case of a border wall in danger of collapsing:

> "The thereby identifiably impending danger of the wall collapsing and the inevitably connected danger of the soil elevated up to the edge of the wall slipping onto the estate of the claimant already constitute an impairment of property, as a serious danger suffices for this." (Higher Regional Court of Düsseldorf, ruling from 05.12.1990 – 9 U 101/90).

As elaborated above (with evidence offered), the danger of flooding is so concrete that it is only a matter of chance and of no longer influenceable factors when the danger materializes. Furthermore the water level continues to rise – due to the ongoing emissions by the respondent, among other things – so that, in absence of protective measures, the flooding of the claimant's property must be anticipated.

2.4.
As far as one should stipulate the presence of the danger of recurrence as an unwritten prerequisite of § 1004, that is given. Danger of recurrence exists when there is a serious, objective, fact-based concern about further disturbances, whereby a serious impairment threatening for the first time is also sufficient (Palandt, BGB, 71th Ed., 2014, § 1004, recital 32; Federal Court Neue Juristische Wochenschrift 2004, 3701).

As set out above, not only the emissions of the respondent persist, but also the impairment of property, as the lake can burst anytime and thereby cause the flood wave.

3. Disturber
A generally accepted definition of the disturber and therefore the party liable under § 1004 German Civil Code does not exist.

3.1.

According to the jurisprudence of the Federal Court, a differentiation is to be made between disturbances by actions and disturbances by conditions.

A disturber by action is only one who 'has sufficiently caused the impairment of property with his conduct, i.e. through his positive doing or through undue neglect of his duties' (most recently Federal Court, ruling from 01.12.2006, V ZR 112/06, recital 9, juris).

A disturber by condition is one who "has not indeed caused the impairment, but with whose substantial intent the impairing condition is sustained" (most recently Federal Court, l.c.).

This requires, according to the Federal Court, that the party held liable controls the source of the disturbance, and thus has the capacity to affect its removal (cf. Senate, BGHZ 62, 388, 393; 95, 307, 308; Erman/Ebbing, BGB 11th Ed., § 1004 recital 120). This is presently indisputable; the respondent would have had the capability in the past decades and even practically still has it today to refrain from its greenhouse gas emissions.

Further, the impairment must be attributable to the party held liable. The Federal Count states with regard to this (unspecified) criterion:

> "Herein is does not suffice – as elaborated – that the party held liable is the proprietor of the owner of the object, from which the disturbance originates. For the required attribution of the impairment, according to settled case law of the Federal Court, it is necessary that the impairment at least mediately is traceable to the intent of the proprietor or owner of the object of disturbance…"
> (Federal Court, ruling from 01.12.2006,V ZR 112/06, recital 14, juris)

This too is the case: The greenhouse gas emission are caused willingly and knowingly – they are the foundation of the business model and prerequisite for providing the respondent's customers with their electricity and heat supply – insofar as it has not yet created the capability to meet this demand through renewable sources of energy.

The respondent is, pursuant to these principles, at least a disturber by condition, as well as a disturber by action via its control over the emission activities of its subsidiaries.

3.2.
The fact that the respondent is indisputably not solely responsible for the anthropogenic climate change does not oppose its status as a disturber. For the impaired party is entitled to an independent claim against every disturber. The owner is not required to take action against every disturber.

With regard to the impairment through multiple disturbers, the owner can take action against each one according to its causational contribution (Federal Court, Neue Juristische Wochenschrift 1976, 799, here the contribution is termed "contribution to the offence"). This is also confirmed by the jurisprudence, which applies § 830 I 2 German Civil Code analogously to cases under § 1004 (e.g. Regional Court of Cologne, ruling from 13.02.1990, 5 O 331/89, rec. 15, juris).

This conclusion is shared (with regard to climate change) by *Frank*, Klimahaftung und Kausalität, ZUR 2013, 28/30 as well as the signatory (though with regard to public international law) in *Verheyen*, "Climate Change Damage in International Law", Brill, 2006, and equally (for German law) *Koch/Lührs/Verheyen*, in: Lord et.al. Climate Change Liability, 2012, „Germany", p. 399 ff.

Processing the problem dogmatically is attempted by Pöttker, Klimahaftungsrecht, 2014, p. 51 ff., whereby his treatise predominantly refers to the Environmental Liability Act (UmwHG) and § 823 German Civil Code. He too comes to the conclusion that the fact that anthropogenic climate change is caused by a multitude of disturbers does not contradict a principal legal responsibility of an individual.

This matter is further discussed in the section on attribution / causality.

4. Causality
The jurisprudence, also in the context of § 1004, is inclined toward (for the substantiation of human responsibility, inter alia) the categories of tort law with regard to sufficient causality and evaluative attribution (Münchener Kommentar zum BGB, § 1004, 2013, rec. 61 ff.).

4.1.
Causality means the causational effect of an event for an outcome, i.e. for the occurrence of a change. Whether causality in the context of § 1004 is to be deduced in the same way as in tort law, or if standards of police law are rather to be applied, however remains unclear. Also case law so far does not provide any conclusive statements about the theoretical underpinnings of its causality theory; among other things, a clear declaration on whether probabilistic assertions of causality are permissible is missing. Certain margins of uncertainty at any rate are accepted (in greater detail: *Pöttker*, Klimahaftungsrecht, p. 141 ff.). This can become relevant, because, as elaborated above, the cause-effect-relationships in the context of climate change are always accompanied by statements of probabilities.

Without comprehensively addressing the convoluted differences of opinion on the causality theory here, it is possible to discern between factual (logic-based/natural science-based, 4.2. below) causality and legal causality (attribution, adequacy, 4.3. below).

4.2.
In principle, according to settled case law, a conduct is causational when, following the conditio-sine-qua-non formula, if the conduct in question were to cease, the impairment would necessarily also cease.

4.2.1.
The present case however falls indisputably into the category of cumulative damages or the so-called cumulative causation. Hereto *Kohler* (in Staudinger, Umwelthaftungsrecht, 2002, Introduction, rec. 155f.):

> „In these cases, depending on the circumstances, a multitude of emitters can be causal of a damage, when several emissions trigger the damage through additive or synergetic effects, so multiple emitters cumulative damages, and namely particularly as distanced and long-term damages…
>
> Cumulative and distanced damages, even when they are caused by small-scale emitters, are as such not intentionally legally excluded from liability."

Also for the here comparable norm *Roth* in Staudinger/Roth, BGB, 2009, § 905 No. 278:

> 'Are the impairments of several emitters regarded on their own insignificant, as soon as they become significant in accumulation, injunction can be demanded by each emitter, until insignificance is reinstated.'

According to settled case law, a factual causality is also given when the action of one party could not bring about damage by itself, but only in synergy with the action of another or some other cause, so-called cumulative causality (cf. Federal Court, Neues Juristisches Wochenblatt 2002, 2709).

In these cases the sine-qua-non formula can only be applied in the sense that a contribution to the causation was made, and that the sum of all contributions indirectly leads to the impairment of property.

4.2.2.
Without the amounts of emitted greenhouse gases from all emitters collectively, the present impairment of property would not occur.

This was already argued above and is substantiated also with regard to the Peruvian Andes statement of the IPCC, which has specifically observed the human climate signal in the Peruvian Andes and has come the conclusion that the retreating of the Andean glaciers in South America can be 'traced back' to climate change with 'very high confidence' (IPCC 5th AR, WG II: Chapter 27, p. 1544, Table 27-8, **Annex K 16**).

In the claimant's view, this corresponds to an exposition with 'almost absolute certainty' (cf. Federal Court, ruling from 30.01.1961, III ZR 225/59, juris and BGHZ 34, 206/215). A probabilistic consideration is insofar not necessary.

Without anthropogenic climate change, Lake Palcacocha would not be overfilled with water to the extent that it presently is. The collapse of a moraine dam or the fall of a chunk of ice into the lake would not cause a flood in the way that it is currently feared by public entities in Peru.

The causal connection between action and outcome is thereby fundamentally given.

4.2.3.
The possibility in principle to trace a causal relationship in relation to the case of climate change is affirmed among others by the regional court of The Hague in the case of Urgenda (**Annex K 28, English**). For instance in no. 4.32 the court affirms in principle the consequences of climate change due to human emissions (albeit due to the case constellation not with regard to a concrete impairment, but for the future):

> "… it is currently very probable that within several decades dangerous climate change will occur with irreversible consequences for man and the environment"

The US Supreme Court has also confirmed causality between GHG emissions of vehicles and climate-induce coastal erosions in Massachusetts due to climate-induced risen sea levels in the case of Massachusetts versus EPA (549 U.S. 497 (2007), 23; see: Verheyen/ Lührs, Klimaschutz durch Gerichtsurteil in den USA – 1. Teil: Öffentliches Recht, ZUR 2009, 73) .

Also in literature there is an affirmation of the legally relevant causal relationship between emissions and climate effects (in their respective analytical contexts):

> *Lord* et al., Climate Change Liability, Cambridge University Press, 2012, p. 33
> *Verheyen*, Loss and damage due to climate change: attribution and causation – where climate science and law meet, 158 International Journal

of Global Warming, Vol. 8, No. 2 (2015)
Frank, Climate Change Litigation – Klimawandel und haftungsrechtliche Risiken, Neue Juristische Online-Zeitschrift 2010, p. 2296 ff.
Verheyen/Lührs, Klimaschutz durch Gerichtsurteil in den USA – 2. Teil: Zivilrecht, Zeitschrift für Umweltrecht 2009, 129

4.2.4.
The present case in not comparable, on the other hand, with the forest degradation cases (cf. for instance Federal Court, III ZR 220/86, ruling from 10.12.1987, juris). While the present case revolves around cumulative and distanced damages, they are of a different kind than those in the forest degradation cases: there it was unclear, which emissions of which power plants had even resulted in the actual tree damage – so which sulphur dioxide molecules had rained down in exactly which place.

The case of greenhouse gas emissions however presents no comparable problem, as they are distributed in the atmosphere and any emission contributes to the warming of the climate.

4.2.5.
If it is required in the specific context to classify the respondent's emission contribution as a *necessary condition* remains to be examined. This means whether the consequences at hand (impairment of the claimant's property rights) would have occurred without the emissions contribution of the respondent solely due to the remaining GHG amounts in the atmosphere.

In case of cumulative causation of impairment through emissions from various sources, legally relevant causality is established if the accumulated emissions contributions cause significant impairment. (vgl. Staudinger/
Roth (2009) § 905 Rn 278; weiter Frank, Climate Change Litigation – Klimawandel und haftungsrechtliche Risiken, NJOZ 2010, 2296 ff.).

In the claimant's view, a restriction to the effect that specifically the emissions of one of the polluters leads to the detrimental effect ("necessary consequence") is not possible here without excluding the model of cumulative causality entirely. Such an intention is not to be gathered from case law.

The question of the "necessary condition" could be relevant, however, in such cases when emissions cumulatively contribute to the exceeding of a certain danger or effect threshold, after which then no further worsening occurs (a so-called "non-correlative damage"). In the literature of German environmental liability law, the causality of such emission contributions is partly disputed, as for instance *Köhler* in: Staudinger, BGB, Annex to § 906 (Environmental Liability Law), Introduction rec. 157 and 198 with further references.

The present case is not of this kind. Every degree of warming leads to a more rapid and intense melting of the glaciers, which flow into Lake Palcacocha. This process is also ongoing.

The respondent is contributing to this gradual warming.

A “harmlessness” with regard to the effect would be only then be given, when the lake bursts and the destruction of, among others, the claimant’s property has already occurred. However, the claim is directed exactly toward the prevention of this damage from occurring.

Thus the assertion stands that, among others, the respondent’s emissions have led to the present impairment and continue to do so, and are therefore causational.

4.2.6.
Presently the standards of § 286 Code of Civil Procedure are relevantly applicable. In proving the causality between greenhouse gas emission and the impairment what is required is “a degree of certainty more suitable for practical life, which stems the doubters without fully expelling them” (BGHZ 53, 245/256)

In the claimant’s opinion, the statement of the IPCC about a ‘very high confidence’ has to suffice at this juncture alone already because a different statement will, for systematic reasons, never be possible. As already explained above, the scientists of the IPCC themselves note that linear causations do not exist in climate science, and therefore all statements about the highly dynamic climate system can only be verified by means of modelling and statistics. Uncertainties are not to be fully dispelled.

This was also recognized by the count in The Hague (**Annex K 28**, no. 4.13), and yet it instructed the Dutch government to intensify its climate protection efforts.

In the claimant’s view, with regard to the settled climate science, a case of prima facie evidence is given.

4.2.7.
In the case that the court does not share the claimant’s opinion in this point, he, as a precaution, already invokes § 830 paragraph 1 sentence 2 German Civil Code analogously (liability also when it cannot be determined which of multiple involved parties has caused the damage due to its actions).

As *Canaris* correctly elaborated, a liable party cannot be released from liability because another involved party *may* have caused the damage (Larenz/Canaris,

Schuldrecht, special volume 2013, § 82 II.3.b.), despite its causational contribution being ascertained (cf. comprehensively on the possibilities of forming analogies *Pöttker*, Klimahaftungsrecht, p. 154 ff.).

Case law has also already gone down this path (Regional Court of Cologne, ruling from 13.02.1990, 5 O 331/89, rec. 15, juris; Federal Court, ruling from 27.05.1987, V ZR 59/86, juris (regarding § 906 German Civil Code)).

4.3.
The question of whether an 'attributability' beyond pure causality must be given, is not conclusively set out and is not provided for by the facts at issue within the meaning of § 1004 German Civil Code.

The Federal Court appears to still be of this opinion; in any case the formula of "adequate causation" is to be considered as settled case law (cf. for example ruling from 01.12.2006 - V ZR 112/06 – juris; ruling from 22.09.2000, V ZR 443/99 – juris; ruling from 17.12.1982, V ZR 55/82).

These rulings however do not deal with comparable cases of cumulative causality. In the claimant's opinion, in the present case the ratio legis and the necessity of adequacy is already accounted for by the fact that only the partial contribution of the disturber to the impairment is object of the claim. For the claimant currently only contests the contribution of the respondent.

In part, the view is represented that in the case of indirect disturbances – so when further stages still lie between action and impairment – principally a limitation of liability is necessary (cf. for instance Herrmann, Der Störer nach § 1004 BGB, 1987, p. 472 ff.), and the jurisprudence of the Federal Court may be understood in the same way. The claimant is not of that opinion, however proactively it is proffered that even when applying these standards the conduct of the respondent is causational for the impairment of his property:

In essence the jurisprudence inquires, among other things, about the predictability of the effects of its own actions, or in other words about a security obligation (thus the Federal Court for instance attributes only such influences to the disturber which "a traceable to an objective hazard caused by him, against which he must safeguard his neighbours" (cf. Federal Court, Neue Juristische Wochenschrift 2004, 3701 f. concerning wind breakage that was promoted by deforestation).

It was already elaborated above that the respondent was long aware of the dangers of greenhouse gas emissions. As, for instance, the court in The Hague determined in the case of Urgenda (**Annex K 28**), the realization also existed among scientists markedly prior to 1990 that anthropogenic climate change can lead to considerable damages:

> 4.11
> "Well before the 1990s, there was a growing realisation among scientists that human caused (anthropogenic) greenhouse gas emissions possibly led to a global temperature rise, and that this could have catastrophic consequences for man and the environment."

The IPCC was already founded in 1988. In 1992, the UN Framework Convention on Climate Change (UNFCCC) was negotiated, in which the cause-effect-relationship was clearly established and of which the public too was made aware through media coverage. The respondent itself has already acknowledged its climate responsibility for in the name of the whole corporation since 1995 (declaration of the German Association of Energy and Water Industries (VDEW) on climate protection) and even went as far as to set its own reduction goals

> (cf. for instance German Bundestag printed paper 13/6704 from 14.01.1997, - Response of the Federal Government – Bundestag printed paper 13/3988 – implementation of the self-commitment declaration of the German business and industry associations on climate protection).

Presently the respondent is not to be attributed entirely extraordinary courses of damage, which it could not have reasonably reckoned with. Rather, the respondent has decided by itself to continue its activities of converting fossil fuels into electricity and heat, and it does this even 20 years after the above-mentioned declaration as Europe's largest single emitter of CO_2 (cf. **Annex K 22**), with the intention of making profits.

Against this background it is not apparent why the impairment, according to the standards of adequacy and predictability, should not be attributable to the respondent.

5. Unlawfulness
The interference is unlawful.

The basis for this is the condition contradicting the substance of the property, not the action leading to it (Federal Court, Neues Juristisches Wochenblatt-RR 03, 953; Higher Regional Court of Bavaria FG Prax 95, 231).

The unlawfulness is normally indicated by the impairment (Federal Court WM 71, 278) and is not obviated because the prerequisites of the impairing effect of an action only occurred after it was carried out (BGHZ 135, 235; Palandt, BGB, 71st ed. 2012, § 1004 rec. 12).

6. Obligation to tolerate

An obligation to tolerate pursuant to § 1004 paragraph 2 German Civil Code does not exist. An obligation to tolerate, as well as (not apparent) grounds of justification, would, if applicable, be for the respondent to prove. § 1004 paragraph 2 German Civil Code legally qualifies as an objection.

Only as a precaution the following is elaborated:

The claimant is not obligated to tolerate by § 906 paragraph 1 German Civil Code (analogously). Thus the owner of a property cannot prohibit the channelling of gases, fumes, odours, smoke, soot, heat, noise, vibrations and similar influences emanating from another property, insofar as the influence in no way or only insignificantly impairs his use of the property.

This norm is already inapplicable. For presently the matter in dispute is not the emission of greenhouse gases originating with the respondent, the influence of which on his own property the claimant wishes to prevent. The matter of dispute lies in the impairment of the property by the flooding risk posed by the lake, which was mediately caused by the respondent.

Furthermore, § 906 aims to administer a balance between the use of different properties. The regulation limits the scope of a property owner's right of defence against emissions, in order to overcome the antagonism of owners' opposing interests, and thereby guarantee as intensive and reasonable a usage as possible of all properties as part of the space (Münchner Kommentar zum BGB, 2013, § 906 rec. 1). It revolves in part around defensive claims, with which the owner of a property restricts another by applying their right of defence (e.g. § 1004) in order to indirectly deny him a certain usage.

The claim presently asserted by the claimant however is not directed toward the respondent having to refrain from a certain usage. Rather, protective measures are demanded, which do not restrict the respondent in its property right to proceed with its property according to its discretion. The conflict, which is envisioned by § 906 German Civil Code, therefore does not exist.

Further, § 14 sentence 1 Federal Emission Control Act (BImSchG) does not establish an obligation to tolerate. Thus, based on claims under private law to defend against impairing influences from one property onto another property, the cessation of operation of an incontrovertibly authorized facility cannot be demanded, but merely provisions to eliminate the impairing effect. Presently however the cessation of operations is not being demanded. Rather, with the removal of the disturbance, it is such provisions within the meaning that are being pursued. Therefore § 14 sentence 1 BImSchG is not applicable.

Also the compliance with obligations under the Greenhouse Gas Emissions Trading Act (TEHG) does not result in an obligation to tolerate (or in a cancel-

lation of the unlawfulness), as explicitly stated by *Pöttker*, Klimahaftungsrecht, 2014, p. 126.

C. Amount in dispute

The amount in dispute is based on § Code of Civil Procedure; therein the interest of the disturbed party in the removal or cessation of the disturbance is key (cf. Münchener Kommentar zum BGB, 2013, § 1004 rec. 303). As the claimant wishes to protect his house from destruction, the amount in dispute is to be assessed according to the value of the house. The value has been estimated according to local standards and prices on the real-estate market.

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