The Climate Change Performance Index

Results 2016

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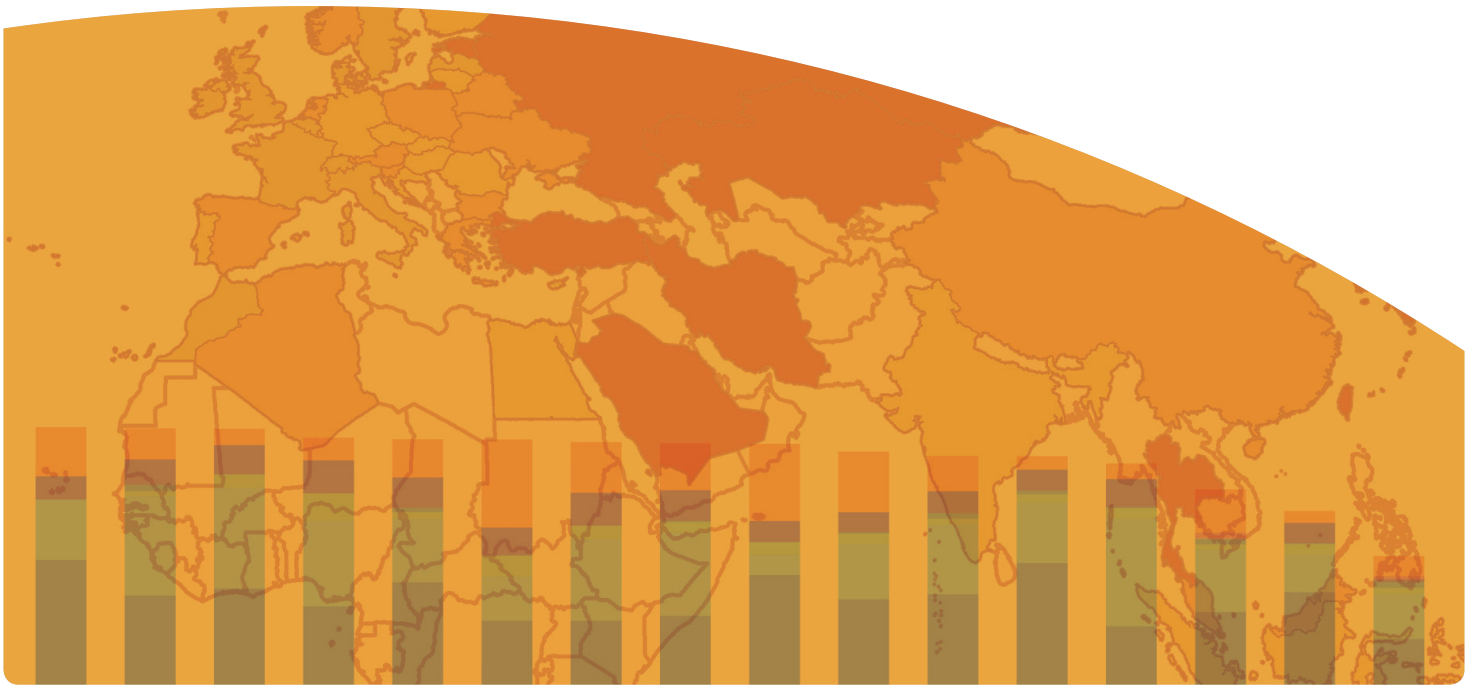

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Contents

Foreword

Dear Reader,

Our world is characterized by fast moving geopolitical and natural changes and the scenarios drawn by climate change specialists are alarming. If we want to avoid dangerous climate change and its ample consequences for creatures all over the world, it is necessary to take action right now. Awareness of the danger is growing and with the IPCC's Fifth Assessment Report, also evidence has grown once more that fossil fuels such as coal have to be left in the ground in order to minimize those threats. The Climate Change Performance Index (CCPI) since 11 years now, keeps on working to bring awareness forward. Since 2005, the CCPI has been contributing to a clearer understanding of national and international climate policy. The various initial positions, interests, and strategies of the numerous countries make it hard to distinguish their strengths and weaknesses. The CCPI is an important tool to address this.

To demonstrate existing measures more accurately and to encourage steps towards effective climate policy, the CCPI methodology was evaluated in 2012 and improvements have been made since. The integration of data on emissions from deforestation and forest degradation was one of the major steps in this process, made possible due to the data provided by the FAO Global Forest Resource Assessment 2015. Alongside energy-based emissions, deforestation and forest degradation are another important source of anthropogenic CO_2. By including those emissions, we can present a more complete view of man-made impacts on the world's climate.

The following publication is issued by Germanwatch and Climate Action Network Europe. However, only with the help of about 300 energy and climate experts from all over the world, we are able to include a review of each country's national and international policies, with respect to their efforts to avoid climate change. We greatly appreciate these experts for taking the time and effort to contribute with their knowledge. Experts are mainly representatives of NGOs working within their respective countries, fighting for the implementation of the climate policy that we so desperately need.

Best regards,

Wendel Trio
(Director of CAN Europe)

Klaus Milke
(Chairman of the Board, Germanwatch)

1. Key Developments: Will Paris Mark a Turning Point for the Path to Global Decarbonisation?

Global energy-related CO_2 emissions showed an increase in 2013. But there are signs of a slowdown, or even a halt, in the growth of emissions, as is indicated by the preliminary emissions data for 2014[1]. Renewable energies are growing rapidly. In 2014, approximately 59% of capacity additions to global electricity generation were additions of renewable energy capacity.[2] Thereby, for the first time, more renewable energy capacity was built than fossil and nuclear capacity combined. Around half of all investments into renewable energies now come from emerging and developing countries.[3] During the last 18 months, we have seen positive signs in many parts of the world. The big question is whether Paris can mark a turning point to stabilise these developments to a steady trend. A crucial element of these ambitions must be to develop strategies for decarbonising energy supply and therefore the economy and to provide necessary means of implementation.

Decarbonisation would imply a decreased energy intensity of the economy, as well as a decreased carbon intensity of energy supply. This means decoupling processes, on the one hand of energy supply from GDP, and of CO_2 from energy supply on the other. Data from 2013 shows a decoupling of energy supply from GDP, but still does not do the same for the carbon intensity of energy supply (see CO_2 per TPES in Fig. 1). There is therefore still no clear indication of a global decarbonisation trend. Nonetheless, these developments are taking place in some of the greatest emitter countries, like in the USA, Germany and the EU as a whole. The most recent data from 2014 and 2015 also indicates a decoupling of energy demand from economic growth in China.[4]

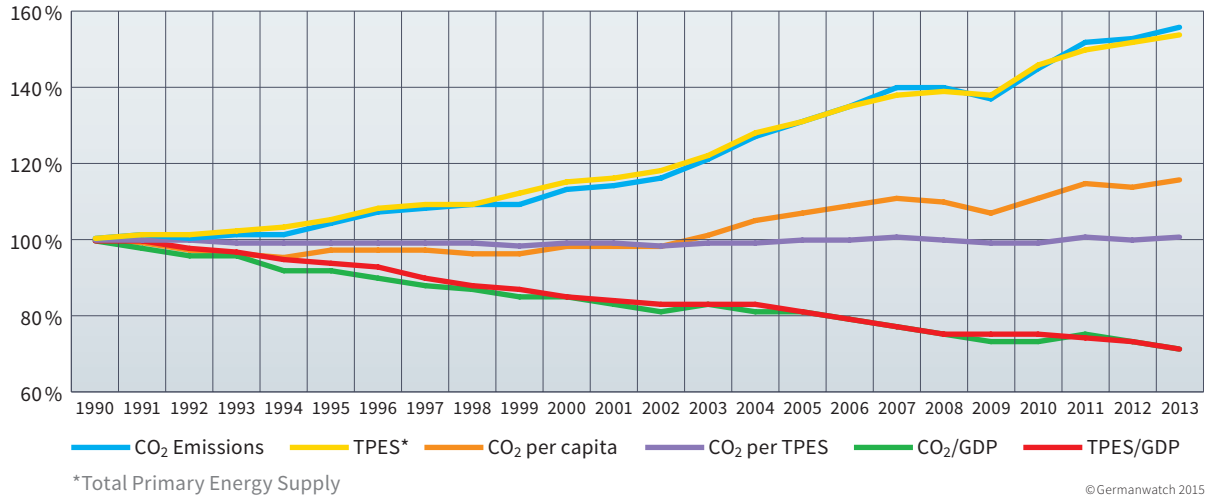
It will be important to further stabilise and accelerate the trend of a decline in the energy intensity of the global economy. In addition, the most important condition for decoupling emissions from energy supply is to decarbonise the energy supply. Two major developments give hope that this is about to happen in the near future:

1. The global development of renewable energy is a great success story. 44 out of 58 countries ranked in the CCPI have double-digit growth rates. Only four countries ranked in the CCPI did not expand their renewables. In more and more countries, the price development of renewables enables them to compete with other energy sources.

2. To enter the pathway to decarbonisation, it is crucial to phase out coal as the dirtiest energy source. It is promising to observe that the world-wide use of coal is on the decline. Some of the largest emitters have reduced their use of coal[5] and recent reports indicate that global coal consumption has declined in 2015[6]. A new publication of the Institute for Energy Economics and Financial Analysis (IEEFA) reports that the changes in China are driving a structural shift in international markets. Coal consumption is declining in many of the large coal countries: The United States (-11%), Canada (-5%), Germany (-3%), the UK (-16%), Turkey (-13%), China (-5.7%), Japan (-5%), South Africa (-2%). In 2015, this dynamic caused a decrease in coal consumption of up to 4%.

Fossil fuels and coal in particular are also relegated to the sidelines on financial markets, where many investors, such as the two biggest insurance companies in the world Axa

Figure 1: Global Development of Key Indicators



[1] IEA (2015d)
[2] REN21 2015., p. 17
[3] REN21 2015., p. 23
[4] IEEFA (2015)
[5] EIA (2015)
[6] Boren; Myllyvirta (2015)

and Allianz, have begun to turn their backs on coal and to withdraw investments from the coal sector. Besides this, different countries are beginning to develop strategies for a nationwide coal phase-out. Examples are the UK, Austria and some provinces in Canada. In New Zealand, the shutdown of the last two coal-fired power plants is announced for December 2018. In the Netherlands, a majority in the lower house of parliament passed a proposal to the cabinet to gradually close all coal power plants in the Netherlands. Germany could be next in line, as was suggested by a recent announcement of the German minister of environment.

While the EU struggles to find its position on various issues and is losing its leading position in climate protection, other countries are stepping in. The most positive dynamic of high-emission countries we see in China. Some parts of the USA are also moving forward quickly. Countries like Morocco show the potential of developing countries to move forward. Another good sign for the Paris negotiations is that the blocking fraction seems to have lost a strong member: with the new government, Canada is back in the negotiations. In the end, it will be crucial that countries such as India or Morocco, which are still well below the world average regarding per-capita emissions, do not follow the development pathways of industrialised countries, but instead choose a cleverer and cleaner development path. Other countries must provide support to those countries so that they are able to make this critical decision. Transformative partnerships are one model that could move this forward, wherein climate finance would be a necessary requisite.

2. Key Results

As in all past editions, places 1 to 3 are empty because, again, no country has done enough to prevent the dangerous impacts of climate change.

- For the 5th time **Denmark** leads the CCPI ranking in 4th place (the first 3 positions remain unfilled). Effective climate protection policies for energy efficiency and the promotion of renewable energies have already been implemented, making Denmark a role model in terms of climate protection. Nevertheless, in comparison to last year, Denmark lost some ground; the distance to the UK and Sweden is closing and some commenters see Denmark, with its new government, at risk of losing the leading position. Experts are concerned about recent developments: the questioning and cancellation of existing climate and energy targets, and budget cuts for climate protection measures.

- This year, the **United Kingdom** enhanced its placement in the CCPI from 6 to 5. Coming from a relatively low emissions level, the country continues to expand its renewable energies; this has been rewarded with an improvement of twelve places in this category. In November 2015, the government announced a conditional nationwide coal-phase out with a settled deadline.

- **Sweden**, last year's 2nd winner, lost its previous ranking to the UK and finds itself in the still good 6th position in the overall ranking. The country leads in the efficiency category and slightly improved its score in the 'emissions level' category. Sweden has one of the highest shares of renewables in the European Union and is therefore rewarded with a placement in the upper range. Experts criticise the government for squandering the good results of the country's previous efforts.

- Just in time for its COP presidency, **France** climbed 6 places to arrive in the top 10 (position 8). The country has the lowest level of per-capita emissions in the G7 and also a decreasing emission trend. Regarding the share of renewables, France is still below the global average but growth rates are positive.

- **Morocco**, already with a relatively good ranking in the previous year, improved 1 rank to position 10 to secure a top 10 placement. Moreover the country also submitted one of the few INDCs[7] to receive a relatively good evaluation by experts. The restrained announcement of increasing the share of renewable electricity capacity to 42% is already anchored in national legislation. Morocco holds 5th place in the policy category.

- Due to the high share of lignite in the energy supply, **Germany**'s emissions score did not improve in comparison to last year and the country ranks 22nd. Regarding the renewable sector, Germany still performs relatively well but other countries have begun to catch up. As an EU member state, Germany did not submit its own INDC but defined more ambitious domestic targets than those of the EU. At the G7 meeting in June 2015, the German presidency pushed for a very ambitious climate agenda, which was acknowledged by national experts and improved Germany's policy evaluation by 7 places. Chancellor Merkel also bilaterally played a constructive role in the preparation of Paris. Some days before Paris, environmental minister Hendricks opened the official de-

[7] In preparation for the Adoption of the Paris Agreement, countries have agreed to publicly outline what post-2020 climate actions they intend to take under a new international agreement, known as their Intended Nationally Determined Contributions (INDCs). The INDCs will largely determine whether the world achieves an ambitious 2015 agreement and is put on a path toward a low-carbon, climate-resilient future.

bate to phase out coal in Germany until 2035 or 2040. The result of this debate will critically influence the future emission trends and ratings of Germany in the CCPI.

- **Indonesia** gained 2 places compared to the previous year. Ranking 24th this year, it has fairly low energy-related emissions but a worsening emissions development. Improvements can be seen in the renewable and the efficiency scores. Despite existing regulations to stop land conversion and a new law to move the permit authority from regional to national level, illegal deforestation continues and increased drastically in the last months.

- **India** climbed 6 ranks this year up to 25. The country performs second best in emissions level but ranks 59th in emissions development. Regarding renewables and efficiency, India's scores improved slightly. National experts value a shift of investments from coal to the renewables sector, including a massive expansion of solar energy. India plans to use non-fossil fuel sources for 40% of installed power capacity by 2030 and so improved its score in the policy ranking.

- **Poland** climbs a remarkable 10 places up to rank 32. Nevertheless, the country still remains in the "poor" category. It improved its scores especially due to the positive trend in energy efficiency and the relatively high speed of renewable energy development. Both trends were triggered by improvements in national climate policy. Despite the improvements in this year's ranking, Poland still blocks any increase in low-carbon ambition within the EU, shown by Poland's weak international climate policy rank. Additionally, Poland's overall energy efficiency level and the development of road traffic emissions are particularly poor.

- Ongoing efforts of the **United States** on the national as well as the international level are reflected in this year's CCPI score, which improved 12 places (rank 34). Despite the US still being the second largest CO_2 emitter, recent positive developments such as the rejected construction of a large oil-sands pipeline and efforts to push international climate negotiations, send positive signals, which will hopefully reflect in future data. National experts have already acknowledged these efforts: the US improved its policy evaluation by 23 places.

- There is no change in **Brazil**'s ranking, which remains at 43. This means that the predicted boost this year due to new FAO data has not taken place; apart from policy evaluations, all sectors have worsened. The policy ranking, however, reflects improvements in Brazil's policies so we may see some positive changes in the coming years.

- **China** climbed 3 positions to 47th place. Regarding its emissions development up to 2013, China dropped to the last position of the ranking. However, more recent data from 2014 and 2015 shows a decoupling of the country's growth in energy demand from economic growth. Further, China's coal consumption seems to have decreased by almost 6% in 2015. The policy evaluation shows a good result and there is an ongoing increase in renewables, which continues China's upward trend in this category.

- With little developments in any of the CCPI categories, **Russia** ranks 53th and remains in the country group of very poor performers. In the field of climate policy, the country lost five places and finds itself on rank 29, retaining its medium performance. CCPI country experts report on positive policy developments in terms of modernisation of the energy sector with a new instrument to introduce renewable energy. Nevertheless, the experts criticise that renewable energy and energy efficiency policies have still to be improved significantly. Russia, as a potential giant for decarbonisation, still hasn't fully awakened to reap the benefits of low-carbon modernisation.

- A slightly positive trend can be seen in **Canada**, which improved its performance by two places (position 56). While on the provincial level some effective initiatives have already taken place, over the last years no efforts were visible on the federal level. The new government has already announced increased efforts regarding climate policies, which was rewarded in Canada's policy evaluation where it climbed 12 places.

- **Korea** lost 4 places, ranking 57th now, and remains one of the "very poor" performers, since CO_2 emissions are high and steadily rising. The share of renewables in the country's energy supply is below 1%, but a strong positive trend can be observed, rewarding the country with an improvement of 5 places in this category.

- **Japan** dropped 3 places from rank 55 to 58. Its score worsened in nearly every category of the Index. National experts criticise the promotion of coal-fired power plants and the lack of an effective and binding emission trading scheme.

- **Australia** (rank 59) slightly improved its score regarding its efficiency level, policy evaluation and in the renewable sector. If the trend is permanent and continues in the next years, improvements can be expected regarding its emissions level and development, where scores have not changed significantly compared to the last CCPI ranking. Even though the country managed to improve its policy score this year, experts criticise that a transition to a lower emission economy will require significant policy changes.

- There still is no change in **Saudi Arabia**'s climate policy. The kingdom relies heavily on hydrocarbon fossil fuels. Although renewable energies have been built up slowly over the past years, this has not yet had a significant effect on Saudi Arabia's energy supply. The country thus remains on position 61, at the bottom of the ranking.

3. About the CCPI

The Climate Change Performance Index is an instrument designed to enhance transparency in international climate politics. Its aim is to put political and social pressure on those countries which have, up until now, failed to take ambitious action on climate protection. It also aims to highlight those countries with best-practice climate policies.

On the basis of standardised criteria, the index evaluates and compares the climate protection performance of 58 countries that together are responsible for more than 90% of global energy-related CO_2 emissions. There are other countries with good or even higher climate protection performance, but due to methodological reasons, their inclusion is not possible. As the CCPI is mainly emissions based, countries with extremely low emissions simply cannot be taken into account. However it would be interesting to have a closer look on their climate protection efforts, since some of them are very proactive. After 7 years of publication, the CCPI has been thoroughly evaluated in 2012. This evaluation has had two major outcomes. Since then, it has been possible to include emissions from deforestation and forest degradation, albeit not with the same quality of data as energy-related emissions.[8] The second achievement was a new structure and weighting of the individual indicators with a much stronger focus on renewable energy and efficiency as the most prominent mitigation strategies.

The methodology is primarily centered on objective indicators. Thereby, 80% of the evaluation is based on indicators of emissions (30% for emissions levels and 30% for recent development of emissions), efficiency (5% level of efficiency and 5% recent development in efficiency) and renewable energy (8% recent development and 2% share of total primary energy supply).[9] The remaining 20% of the CCPI evaluation is based on national and international climate policy assessments by about 300 experts from the respective countries. An example of the methodology of the CCPI can be found under section 5 “Country Example” and extensive explanations are available in the brochure “The Climate Change Performance Index: Background and Methodology”.[10]

Similar to last year, the average scores for national and international policies are weak. Most experts are not satisfied by far with the efforts of their governments with regard to the 2 °C limit.

The CCPI ranking is qualified in relative terms (better–worse) rather than absolute terms. Therefore, even those countries with high rankings have no reason to sit back and relax. On the contrary, the results illustrate that even if all countries were as involved as the current front runners, efforts would not yet be sufficient to prevent dangerous climate change. Hence, again this year, no country was awarded the rank of 1st, 2nd or 3rd.

3.1 Changes Since the Last Edition

Since the CCPI methodology is subjected to a continuous revision process, so is the underlying data provided by the International Energy Agency (IEA), too. It is important to notice the retrospective changes that influence the comparability of results presented in the different Index years. IEA has begun to use the guidelines of IPCC from 2006, which leads to different results in emissions calculation. Therefore, most of the data reported by the IEA has changed, affecting each country differently.

Revisions to data: People’s Republic of China

China also recently corrected its reported data for the last years: it published new and revised energy statistics for 2013, as well as revised statistics for the years 2000 to 2012. The IEA used these new statistics to revise its 2011-2013 data, based on these newly available figures.

New forestry Data (FAO)

The new FAO Global Forest Resource Assessment 2015 with emissions data from deforestation and forest degradation from 2010 to 2015 was published in September 2015. It is now possible to include updated emissions data for deforestation and forest degradation. Data from non-living biomass and drained peatlands remain excluded, as the availability of reliable data is still insufficient. As soon as better data is available, we plan to include them in the CCPI.

8 Data used in the CCPI includes only CO_2 emissions from living biomass. Emissions from soils and deadwood are not accounted for. Furthermore, the data from the FAO Global Forest Resources Assessment is only updated every 5 years.

9 Regarding the emissions trends, the CCPI 2016 compares the time period between 2008 and 2013. For the emissions level, data from the last three years with available data (2010 to 2013) is taken into account.

10 www.germanwatch.org/en/ccpi

4. Overall Results • CCPI 2016

Table 1

Rank		Country	Score**
1*	–	–	
2*	–	–	
3*	–	–	
4	–	Denmark	71.19
5	▲	United Kingdom	70.13
6	▼	Sweden	69.91
7	–	Belgium	68.73
8	▲	France	65.97
9	▼	Cyprus	65.12
10	▲	Morocco	63.76
11	▲	Italy	62.98
12	–	Ireland	62.65
13	▲	Luxembourg	62.47
14	▼	Switzerland	62.09
15	▲	Malta	61.82
16	▲	Latvia	61.38
17	▼	Hungary	60.76
18	▲	Romania	60.39
19	▼	Portugal	59.52
20	▼	Lithuania	58.65
21	▲	Croatia	58.43
22	▲	Germany	58.39
23	▲	Finland	58.27
24	▲	Indonesia	58.21
25	▲	India	58.19
26	▼	Slovak Republic	57.83
27	▼	Iceland	57.25
28	▼	Mexico	57.04
29	▼	Czech Republic	57.03
30	▼	Egypt	56.96
31	▼	Slovenia	56.87

└ comparison with previous year

* None of the countries achieved positions one to three. No country is doing enough to prevent dangerous climate change.

** rounded

Rank		Country	Score**
32	▲	Poland	56.09
33	▲	Greece	55.06
34	▲	United States	54.91
35	▲	Netherlands	54.84
36	▼	Norway	54.65
37	▲	Bulgaria	53.85
38	▼	South Africa	53.76
39	▲	Malaysia	53.49
40	▲	Algeria	53.30
41	▼	Spain	52.63
42	▼	New Zealand	52.41
43	–	Brazil	51.90
44	▼	Belarus	51.18
45	▼	Austria	50.69
46	▼	Ukraine	49.81
47	▲	China	48.60
48	–	Argentina	48.34
49	▼	Thailand	48.16
50	▲	Turkey	47.25
51	▼	Estonia	47.24
52	▲	Chinese Taipei	45.45
53	▼	Russian Federation	44.34
54	▲	Islamic Rep. of Iran	43.33
55	▲	Singapore	42.81
56	▲	Canada	38.74
57	▼	Korea	37.64
58	▼	Japan	37.23
59	▲	Australia	36.56
60	▼	Kazakhstan	32.97
61	–	Saudi Arabia	21.08

└ comparison with previous year

Index Categories

Emissions Level (30% weighting)

Development of Emissions (30% weighting)

Renewable Energies (10% weighting)

Efficiency (10% weighting)

Climate Policy (20% weighting)

Rating

Very good

Good

Moderate

Poor

Very poor

4.1 CCPI World Map 2016

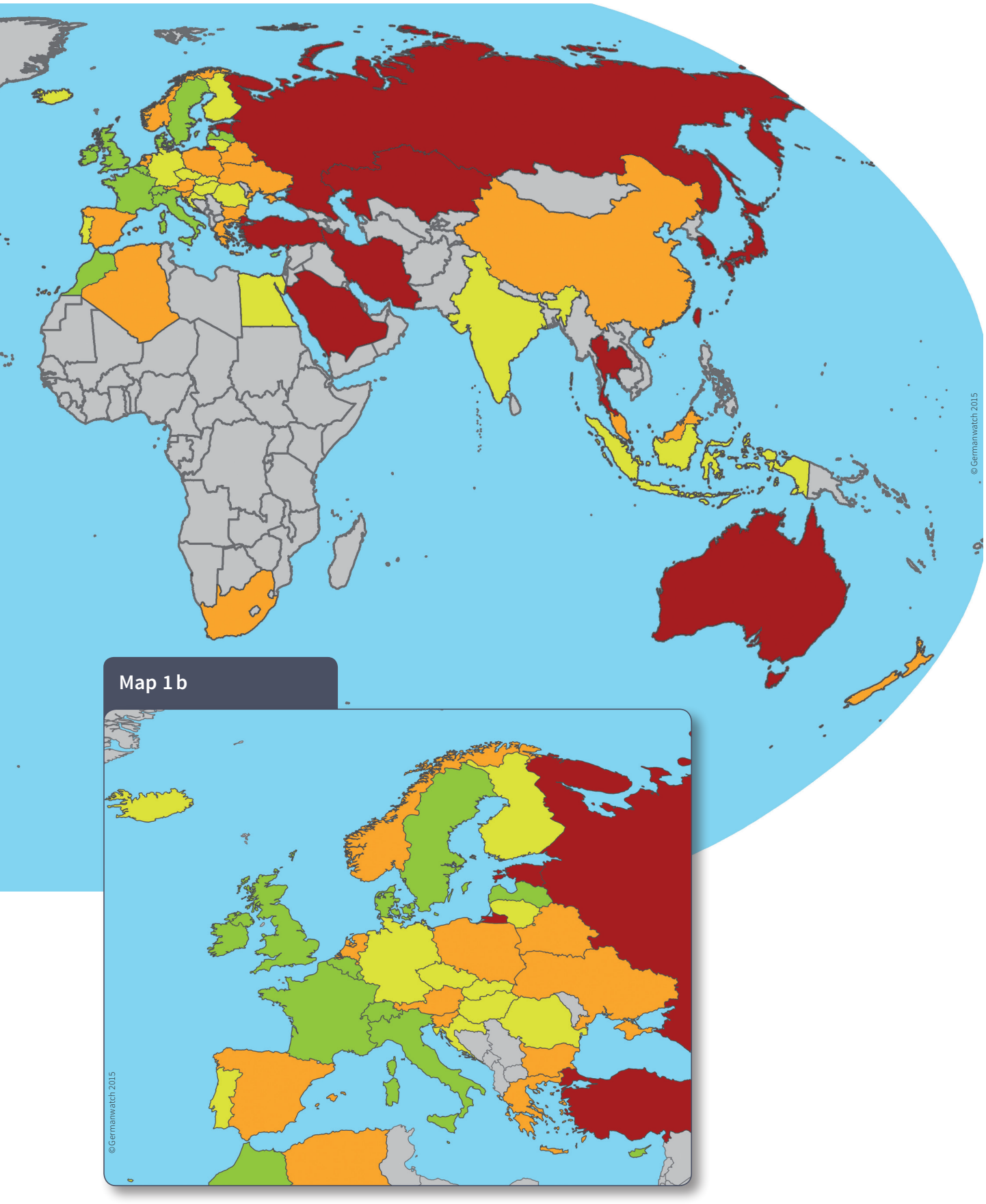
The CCPI 2016 results illustrate the main regional differences in climate protection and performance within the 58 evaluated countries around the world. Despite decreasing growth rates in CO_2 emissions, still no country performed well enough to reach the category “very good” in this year’s Index.

For the fifth consecutive year Denmark is leading the table, followed by the UK and Sweden; though the distance between Denmark and its pursuers shrank. New in the leading group are France, the host of the UN climate summit 2015, and Morocco. Portugal dropped down 10 places to rank 19 and Germany finds itself on rank 22. Mexico dropped out of the top twenty down to rank 28. India (rank 25) made some improvements and ranks one place below Indonesia in the category of moderate performing countries. Coming from rank 42 in the last year, Poland (rank 32) achieved to join the category of relatively poor performing countries in the overall ranking together with the United States that also improved its score (rank 34) compared to 2014. Also featuring in this group are South Africa and Malaysia; Spain, losing 12 places; New Zealand, dropping from rank 35 to 42 compared to the previous year; Brazil and China, which managed to climb up three ranks. Though the performance of Canada still remains to be “very poor”, it managed to improve two ranks from 58 to 56. Saudi Arabia, Kazakhstan, Australia, Japan and Korea form the bottom five of this category.

Map 1 a

Performance

- Very good
- Good
- Moderate
- Poor
- Very poor
- Not included in assessment



Map 1 b

4.2 Partial Results • Emissions Level

Global emissions have not stopped rising; data from 2013 again showed an increase in global energy-related CO_2 emissions. But there are signs of a slowdown or even a halt in emissions growth, as preliminary emissions data for 2014 indicates . A game changer for global emissions development could be the climate summit COP21 in Paris and the new climate treaty, which shall set the starting point for countries to increase their ambitions for climate protection so that, if continuously revised in the future, the mean temperature rise stays below 2 °C globally.

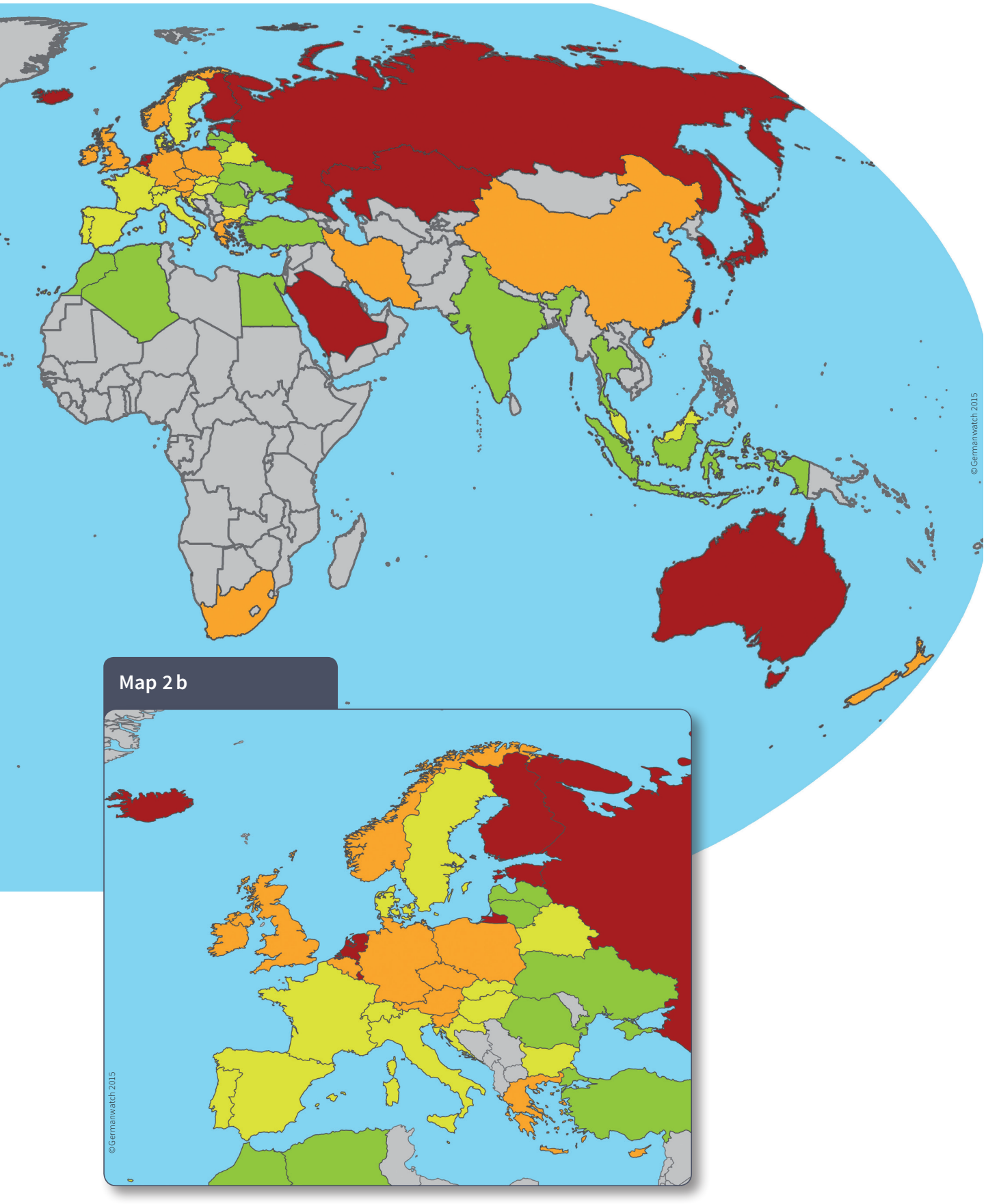
Since this category is the most sluggish, there are only a few changes to report. Traditionally, relatively well performing countries are the ones with low energy-related CO_2 emissions per capita; Egypt, Indonesia, Brazil, Turkey, Morocco, Mexico and Thailand are some of them. Italy, Spain and Sweden made up some ground in the moderate group. After improving last year, Denmark lost 3 places and finds itself at the bottom of the moderate performing countries. Malaysia dropped 6 ranks.

China dropped 6 places to rank 36. South Africa managed to slightly improve its ranking, while Estonia dropped dramatically losing 8 places and joining the group of very poor performers. There are only a few minor changes at the bottom of the table. Finland, Chinese Taipei and Luxembourg improved one rank, causing Iceland, Kazakhstan and the US to drop by one place. The bottom 3 remained unchanged: Saudi Arabia, Canada and Australia.

Map 2 a

Performance

- Very good
- Good
- Moderate
- Poor
- Very poor
- Not included in assessment



Map 2 b

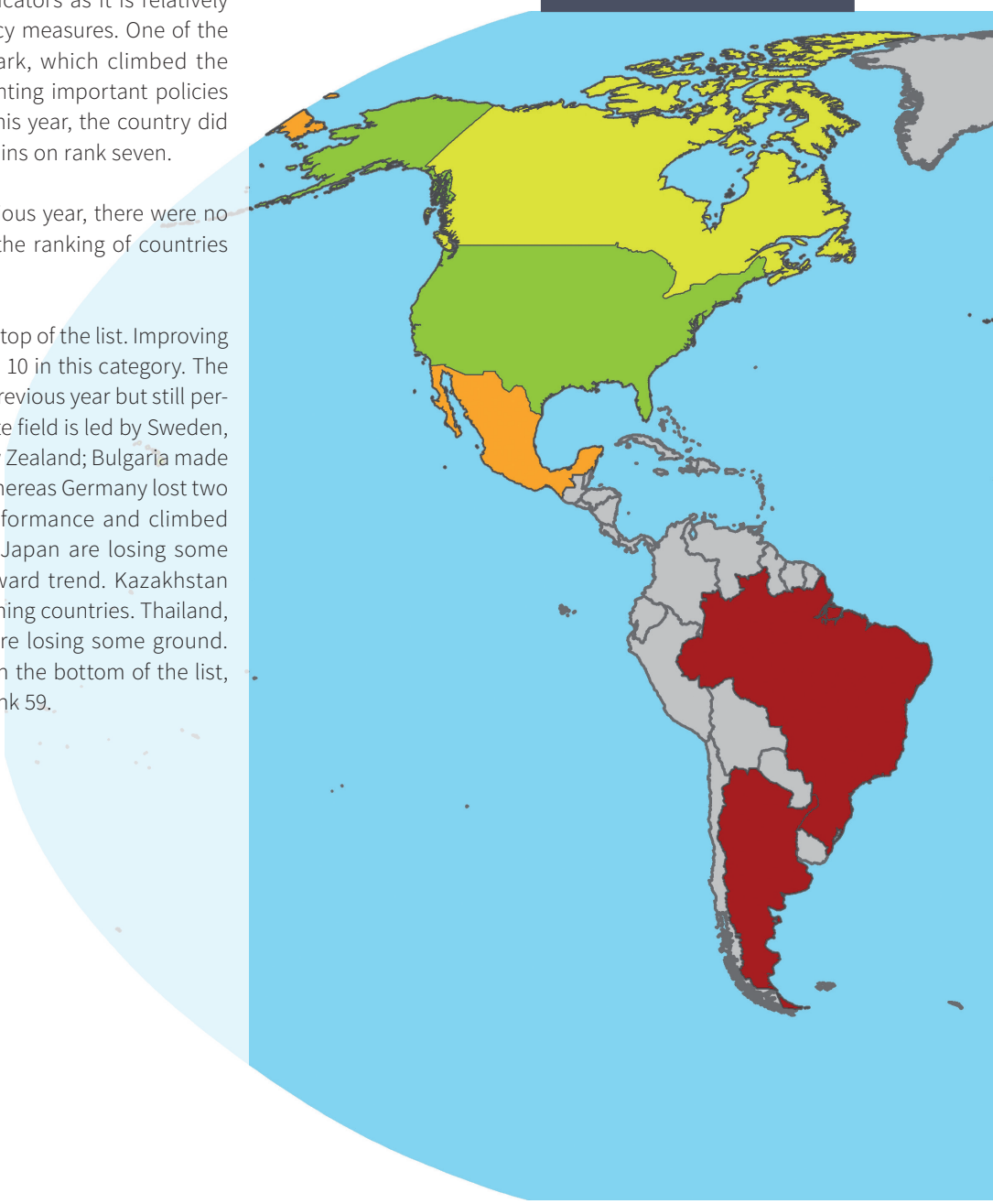
4.3 Partial Results • Development of Emissions

The section measuring the development of emissions remains one of the Index's key indicators as it is relatively sensitive to effective climate policy measures. One of the best examples for this is Denmark, which climbed the ranking after effectively implementing important policies throughout the previous years. This year, the country did not improve any further and remains on rank seven.

In general, compared to the previous year, there were no significant developments within the ranking of countries in this category.

Luxemburg and Ireland remain on top of the list. Improving seven ranks, Finland joins the top 10 in this category. The US lost 3 ranks compared to the previous year but still performs relatively well. The moderate field is led by Sweden, Slovenia, France, Canada and New Zealand; Bulgaria made a jump from rank 36 to rank 28. Whereas Germany lost two places, Poland improved its performance and climbed from rank 41 to 37. Mexico and Japan are losing some ground on their constant downward trend. Kazakhstan left the group of very poor performing countries. Thailand, Brazil, Singapore and Morocco are losing some ground. Saudi Arabia and China remain on the bottom of the list, with some distance to India on rank 59.

Map 3 a



Performance

- Very good
- Good
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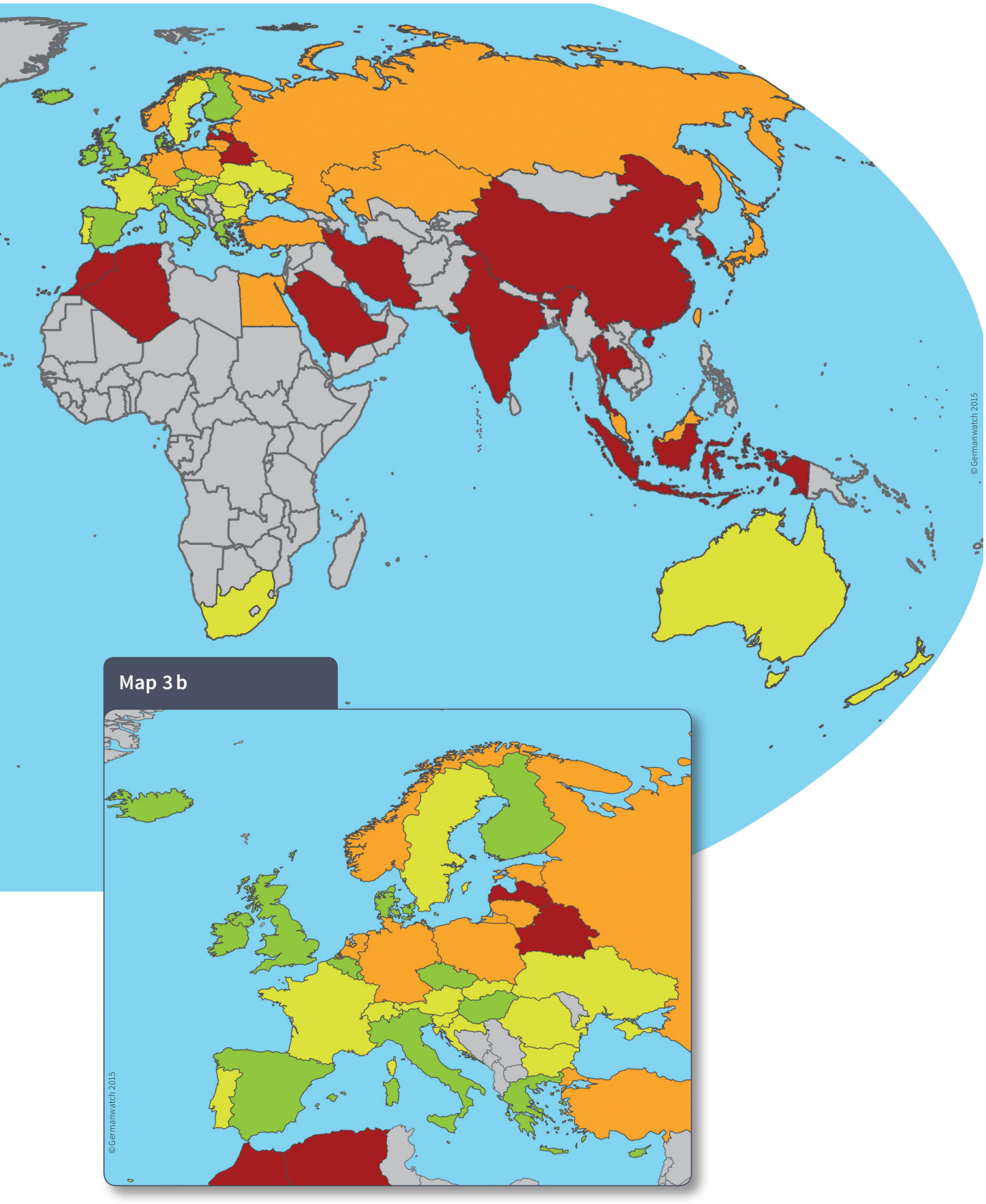
- Not included in assessment



Map 3 b

4.4 Partial Results • Renewable Energies

Since the energy sector contributes most to the CO_2 emissions of a country, renewable energy is the key driver for the transition to a sustainable world. Shifting energy production to renewables is also the most promising strategy for decoupling economic development from CO_2 emissions.

In general we observe massive growth rates in the renewables sector. Only 4 of the 58 countries show a backward trend; most states have made enormous developments with double-digit growth rates.

Malta overtook Belgium at the top of the list; Italy, the UK and Korea improved some places. Coming from a very low level, Poland is developing its renewables sector, which has also led to slight improvements in its ranking and a place amongst the top 10. Germany dropped out of the group of 20 best countries with a still relatively good performance. Greece improved 7 ranks and joined the good performing group, as did South Africa.

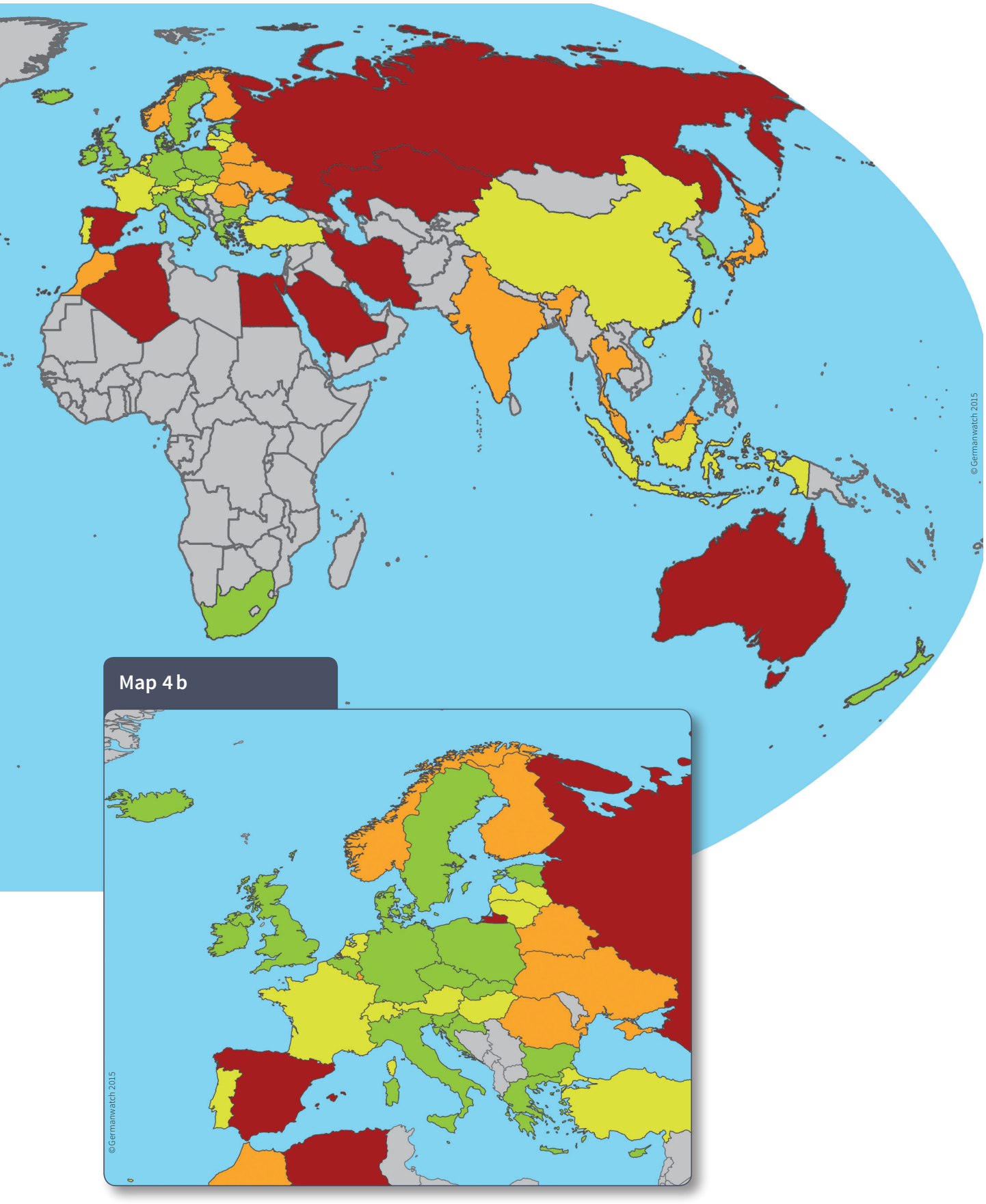
In the moderate performing group, Chinese Taipei, Singapore and Switzerland improved their scores; Hungary, the Netherlands and Brazil all lost ground. Belarus dropped out of the moderate group, while the US remains on rank 43. Morocco's recent expansion of renewables is not yet reflected in the data; the country has not improved from rank 46. The Ukraine dropped drastically and lost 23 places.

There are no significant changes in the group of "very poor" performers. Algeria, Iran, Mexico, Russia and Kazakhstan form the bottom five.

Map 4 a

Performance

- Very good
- Good
- Moderate
- Poor
- Very poor
- Not included in assessment



Map 4 b

4.5 Partial Results • Efficiency

This section of the CCPI assesses the current level and development of the carbon intensity of primary energy supply on the one hand, and the energy intensity of a country's economy on the other. Together with the large-scale deployment of renewable energies, improvements in energy efficiency are crucial for a global reduction of greenhouse gas emissions. The enhancement of energy efficiency levels is closely associated with long-term economic benefits and is therefore one of the major strategies for tackling climate change.

European countries dominate the top 20 in this year's efficiency table, with Sweden, France and Switzerland at the top of the list; the only non-European countries amongst them are Argentina, Indonesia, Singapore, Chinese Taipei and New Zealand.

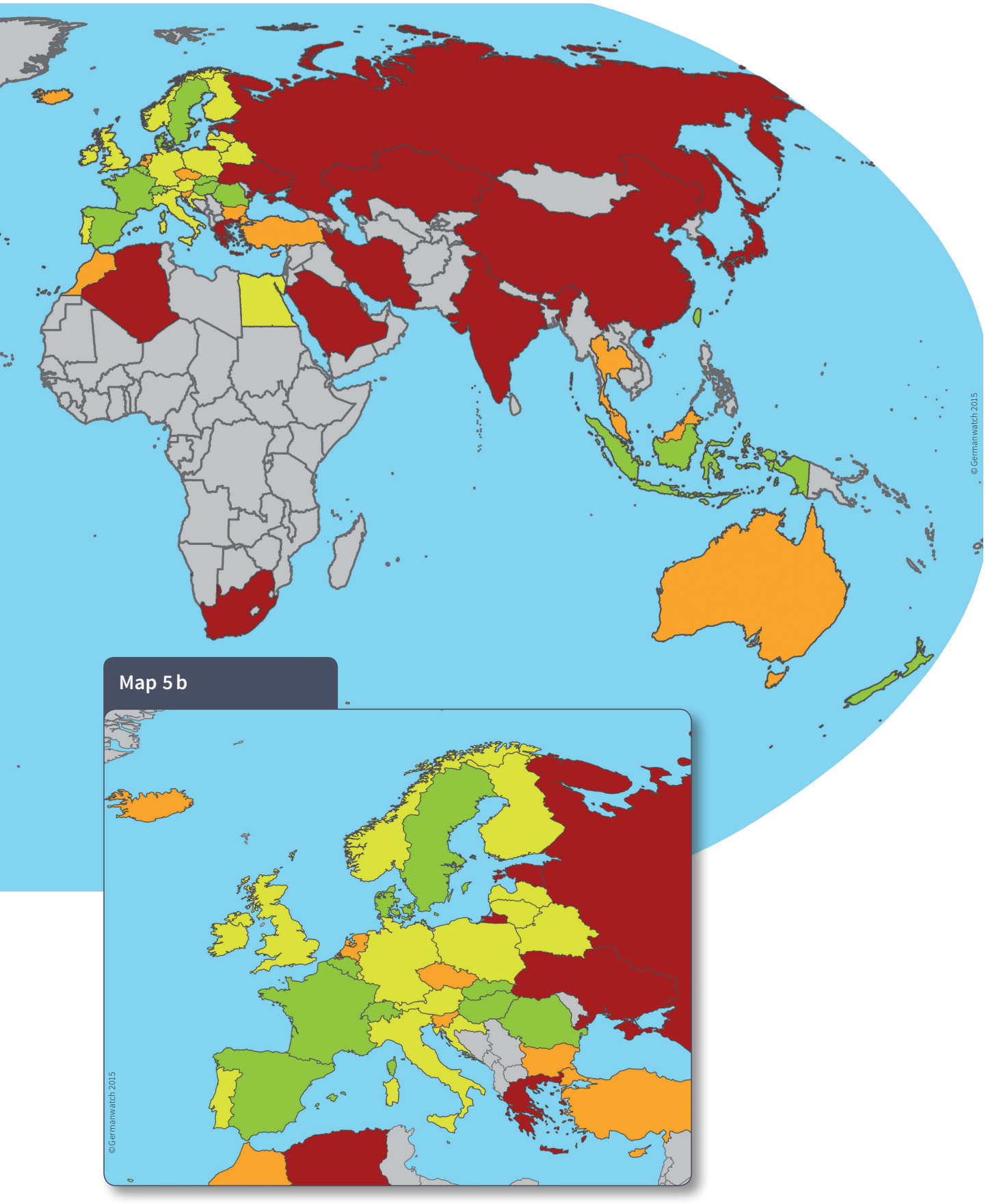
Portugal lost ground and dropped out of the top 20. Within the relatively poor performing group, Turkey improved eleven ranks, while Brazil drastically lost ground. There are no changes in the composition of the bottom 5; the countries ranking lowest with a large gap to rank 56 are Ukraine, Algeria, South Africa, Kazakhstan and Estonia.

Asian and African countries in particular still have untapped potential for improving their efficiency. Both for climate protection efforts and for economic reasons, it is crucial that these countries compensate economic growth for improvements in efficiency levels.

Map 5 a

Performance

- Very good
- Good
- Moderate
- Poor
- Very poor
- Not included in assessment



Map 5 b

4.6 Partial Results • Climate Policy

Reflecting efforts towards an efficient and low-carbon society, this map portrays the evaluation and results of climate policy within the countries observed. About 300 experts from non-governmental organisations contributed to the CCPI 2016 with an evaluation of those policies. While all recent underlying data of the other categories is from 2013 (except for deforestation and forest degradation data from the FAO 2015 report), the expert evaluations reflect up-to-date developments.

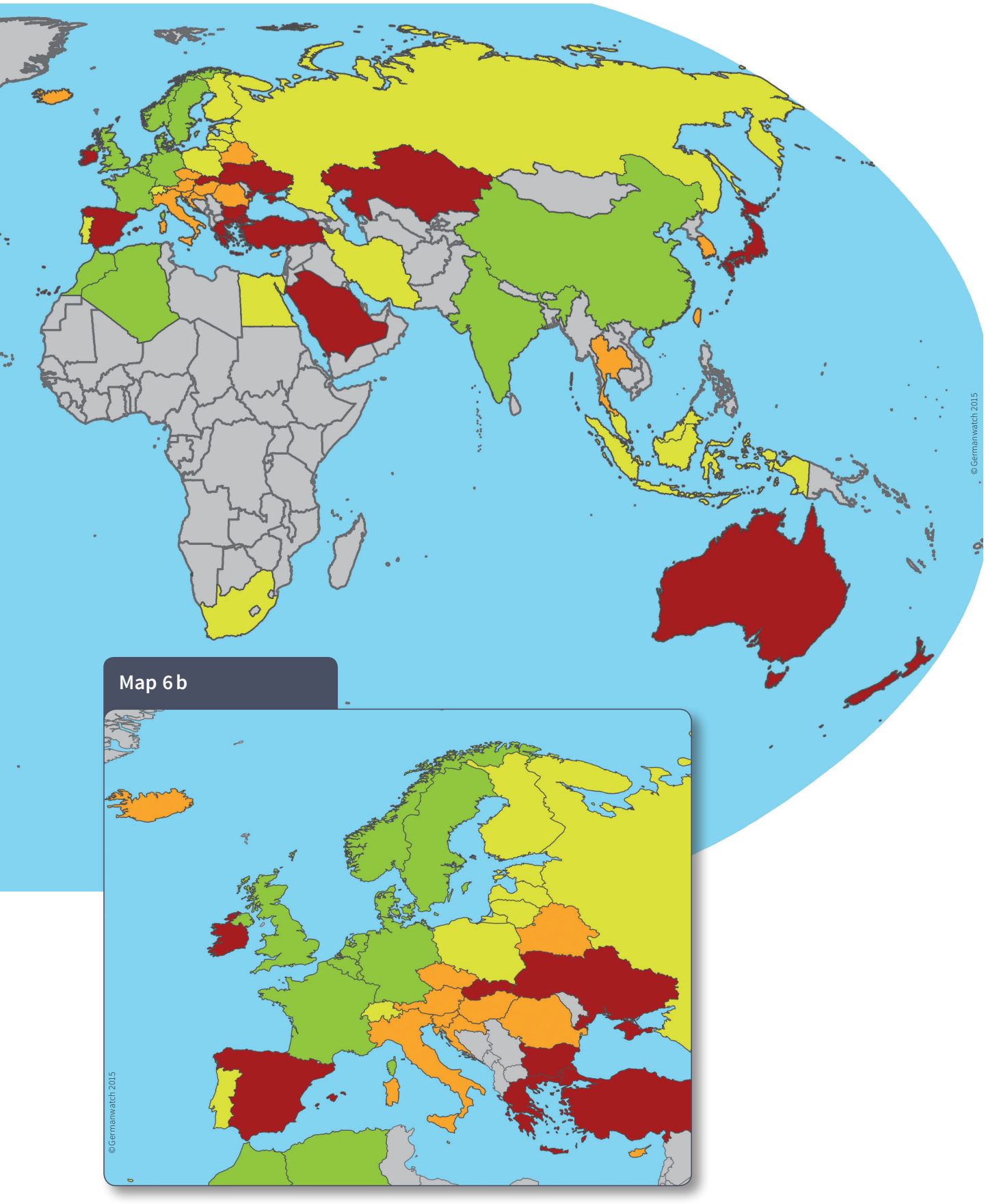
The policy data allows countries with an overall poor performance to be rewarded as soon as a shift in policies is observed (e.g. due to a change of government or of the current government's climate policy). If those trends prove to be correct, these countries are expected to improve even more in the next years and their efforts should be reflected in the emissions data.

Denmark lost its lead in the policy section and dropped twelve places in the overall ranking. China, Morocco, India, France and Germany improved its policy evaluation and find themselves in the group of relatively good performing countries, where they were also joined by the United States, improving its score by 23 places. Mexico dropped some places but still performs relatively well. Portugal, however, joined the moderate group, dropping down fourteen places. Whereas Brazil improved its score by climbing sixteen ranks, and Poland also managed to escape the poor performing category by climbing thirteen places. Likewise Canada improved its score, thus leaving the group of very poor performers. Spain, Turkey, Japan, New Zealand and the Ukraine are this year's bottom five.

Map 6 a

Performance

- Very good
- Good
- Moderate
- Poor
- Very poor
- Not included in assessment



Map 6 b

5. Country Example: USA

To demonstrate the CCPI's methodology, every year we describe the score of one of the 58 countries in which interesting developments are taking place or which merits a closer look. This year, the performance of the United States will be described sector by sector.

When it comes to possible front runners for the negotiations in Paris, the United States is a possible candidate. In the CCPI policy ranking, the country climbed from place 35 to 12. Despite congressional resistance to agreeing to any binding emissions reductions at the international level, the Obama administration in its second term has made climate concerns a focus of its foreign policy.

Experts emphasize the efforts of the current administration in bringing climate change and green economic opportunities to the agenda, in trying to work with the Congress on supportive legislation or in using alternative approaches. Nevertheless, incentives to abolish direct and indirect subsidies for energy from fossil fuels are still strongly opposed. Independent of energy policy at the national level, a number of states and many municipalities have implemented aggressive measures to drive forward renewable energy development and energy efficiency/savings, and to reduce emissions in the energy sector. The US has pledged through its INDC to reduce net GHG emissions by 26-28% of its level in 2005 by 2025, including LULUCF. Though the country has not committed to 100% renewable energy by 2050, it has utilized decarbonisation language, which is taken as a strong signal, though the time frame laid out is not considered ambitious enough to keep warming below 2 degrees. The US also has joined or implemented several international initiatives aimed at combating climate change, including the Global Methane Initiative, the Energy and Climate Partnership of the Americas and the Clean Energy Ministerial.

While the US as the second largest emitter still performs very poorly on emission levels, its development of emissions is declining; here, the country ranks 13th. With the switch from coal to (shale) gas, the country's emissions development in the electricity and heat sector provides an even better picture.[11]

Despite the expansion of renewable energy in the US, there are no changes in its placement in the ranking of this category compared to last year. This means that other countries have also improved their performance in the renewables category. Regarding the development of renewables, the country ranks 33rd.

Coming from a relatively poor level, the efficiency trend, where the US ranks 27th, is positive.

Following the logic of the CCPI methodology, these positive signals sent out by the Obama administration will hopefully also be reflected in the data throughout the coming years.

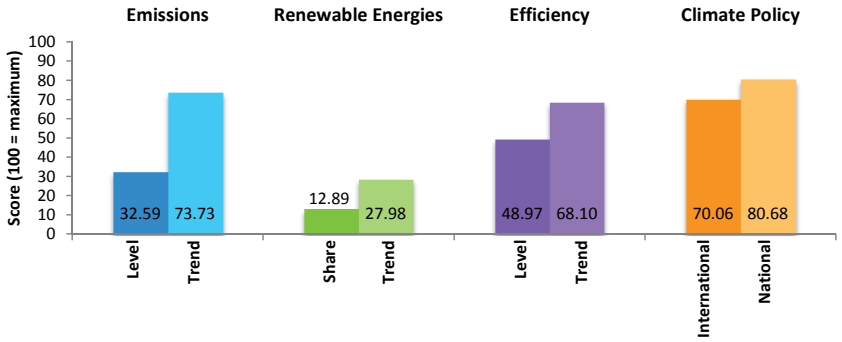
[11] For the climate relevance of shale gas extraction, see the chapter about shale gas in the CCPI Background and Methodology brochure.

Figure 2: Country Scorecard United States

CCPI 2016

Country Scorecard

	last year	Rank
United States	46	**34**



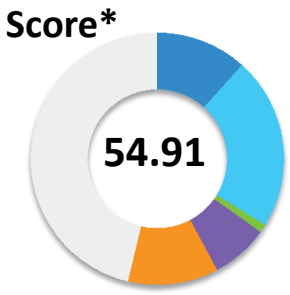
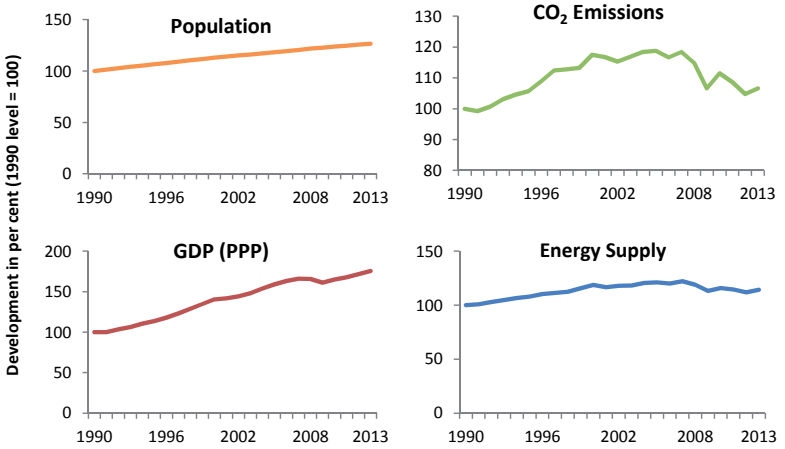


*Diagram shows sum of weighted partial indicators (see indicators table)



Key Indicators	2013
Population [million]	316.47
GDP per capita (PPP) [US$]	45664.71
CO_2 per capita [t]*	16.18
CO_2 from Forests per capita [t]	-0.61
CO_2 per GDP [t/1000US$]*	0.35
TPES per GDP [MJ/US$]	6.34
CO_2 per TPES [t/TJ]*	55.88
Share of Renewable Energy of TPES	6.45%

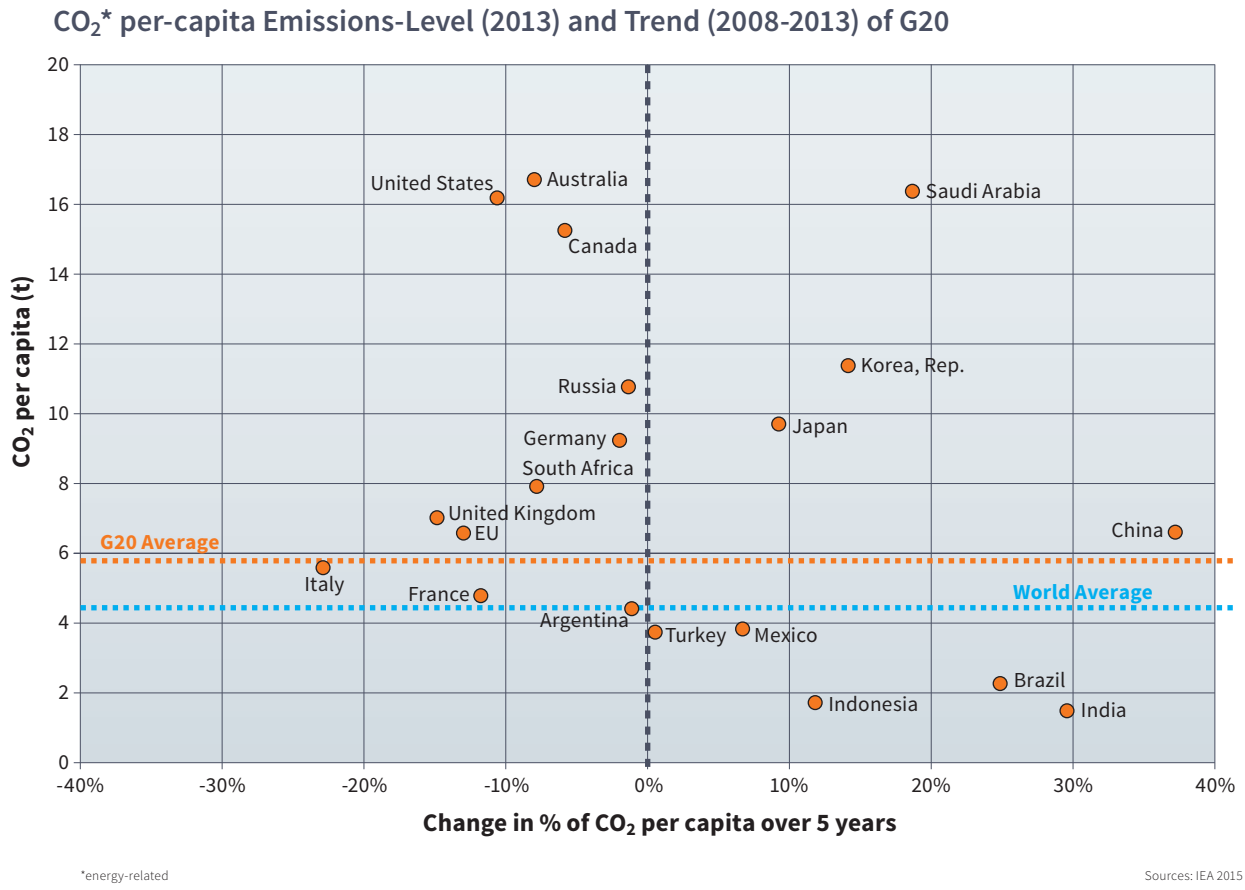
TPES= total primary energy supply
PPP= purchasing power parity in prices of 2005
* energy-related emissions only
Source: IEA (2015) and FAO (2015)

Indicators	Weighting	Score	Rank
Emissions Level			
Primary Energy Supply per Capita	7.5%	**25.41**	**58**
CO_2 Emissions per Capita	7.5%	**16.23**	**59**
Target-Performance Comparison	10%	**47.77**	**53**
Emissions from Deforestation per Capita	5%	**37.55**	**26**
Development of Emissions			
CO_2 Emissions from Electricity and Heat Production	10%	**81.13**	**6**
CO_2 Emissions from Manufacturing and Industry	8%	**69.15**	**29**
CO_2 Emissions from Road Traffic	4%	**77.08**	**10**
CO_2 Emissions from Residential Use and Buildings	4%	**47.37**	**27**
CO_2 Emissions from Aviation	4%	**77.15**	**10**
Renewable Energies			
Share of Renewable Energy in Total Primary Energy Supply	2%	**12.89**	**42**
Development of Energy Supply from Renewable Energy Sources	8%	**27.98**	**33**
Efficiency			
Efficiency Level	5%	**48.97**	**44**
Efficiency Trend	5%	**68.10**	**27**
Climate Policy			
International Climate Policy	10%	**70.06**	**16**
National Climate Policy	10%	**80.68**	**12**

6. Country Group Performances – the G20

As major economies that also include the largest emitters of carbon dioxide worldwide, the G20 have a special responsibility in contributing to ambitious climate protection and getting the world's economies on decarbonisation track. This chapter will take a closer look at the G20's performance regarding CO_2 emissions, renewable energy as well as carbon and energy intensity.[12]

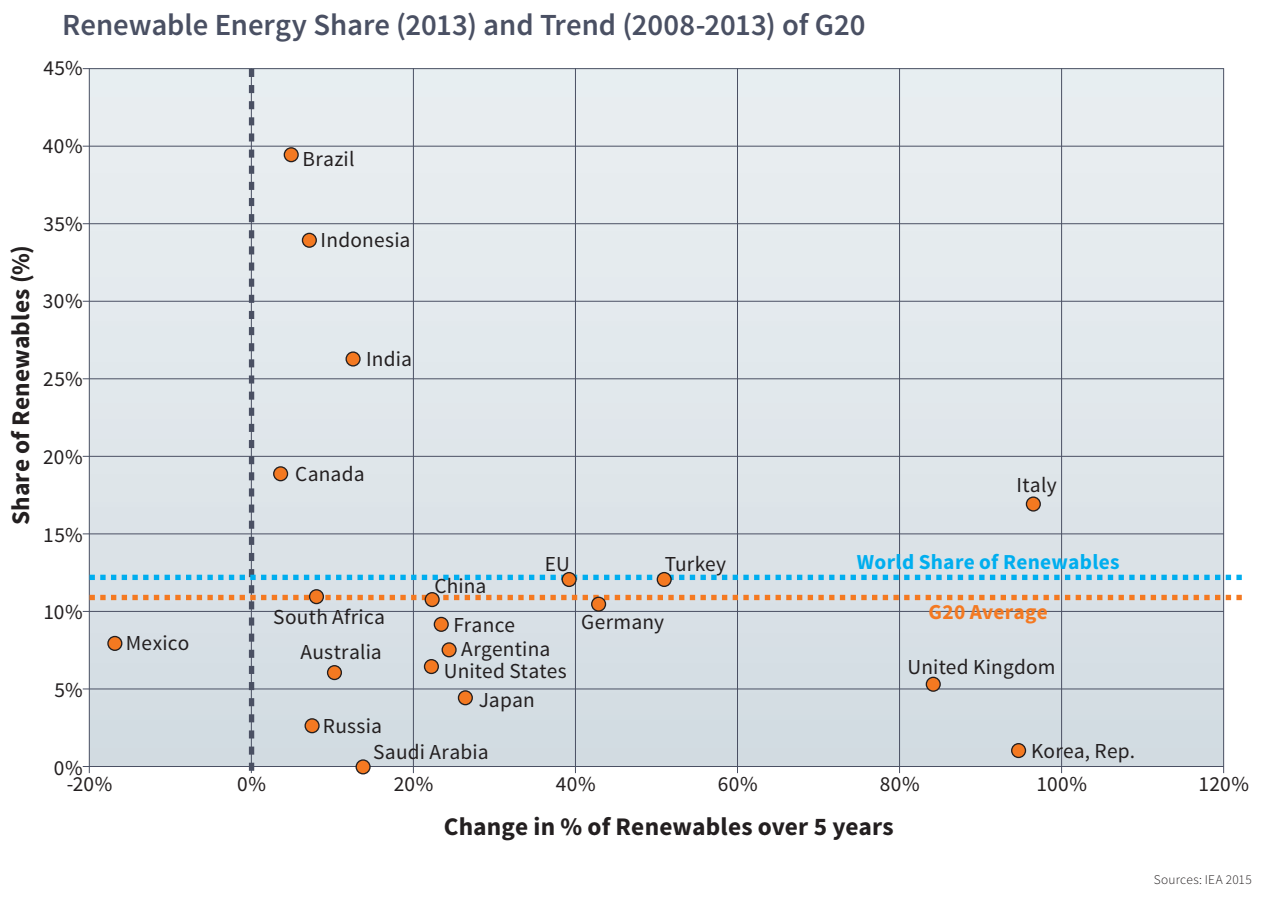
Figure 3: G20 – Emissions and Emissions Trend



G20 countries are accountable for almost 82% of current CO_2 emissions. The annual G20 per-capita emissions amount to 5.7 t CO_2; that is nearly 1.5 t CO_2 above the average global per-capita emissions. Eleven G20 countries show no more growth in energy-related CO_2 emissions. Within the group of countries with high per-capita emissions, Saudi Arabia, Korea and Japan are still increasing their emissions, whereas emissions are falling in the United States, Canada and Australia. Among the countries with lower per-capita emissions, India, China and Brazil all have high growth rates, while emissions are generally decreasing in the EU and in some of its member states in particular. Within the G20, newly industrialized countries like South Africa and Argentina show negative growth rates per capita over the last five years.

[12] A comprehensive evaluation of the G20 performance in the CCPI and the Climate Action Tracker can be found here: http://www.climate-transparency.org/g20-climateperformance

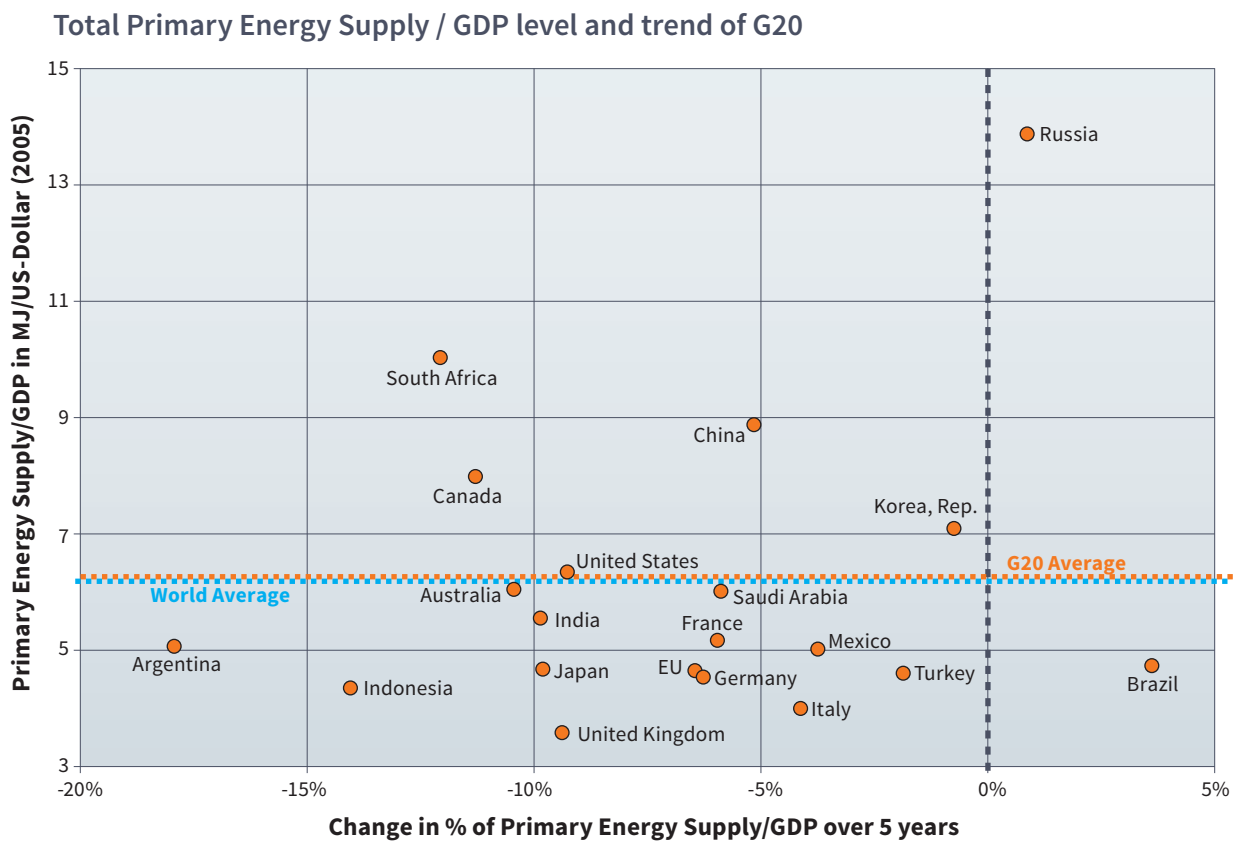
Figure 4: G20 – Renewable Energy Share and Trend



Sources: IEA 2015

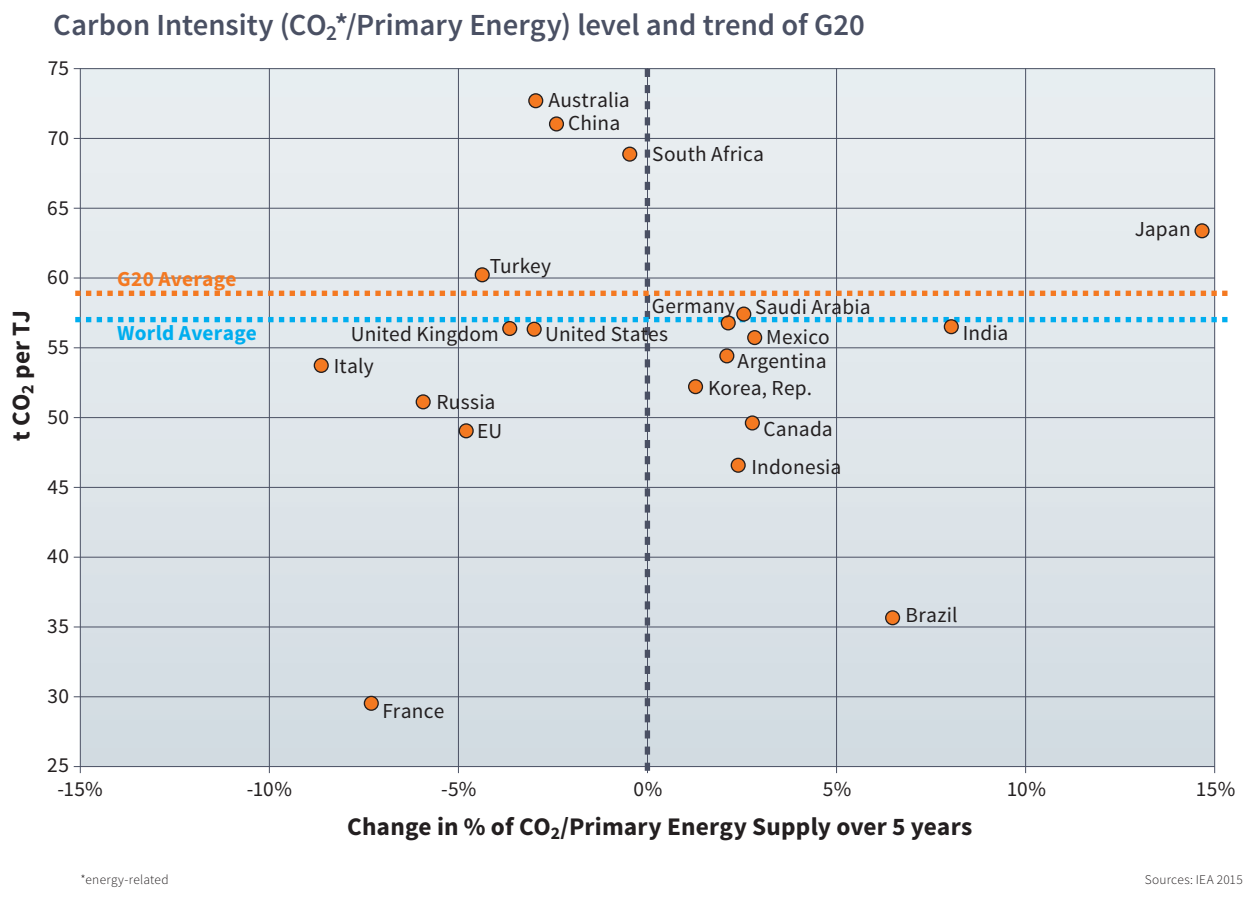
The average share of renewable energy in primary energy of the G20 is slightly beneath the global share. However while twenty years ago only a few countries had embarked upon major programs to increase the share of renewable energy in their energy mix, by now nearly all G20 countries have either already substantially increased their renewable energy portfolio, or have plans to do so. Many G20 countries have seen strong growth rates in renewable energy production. In some cases the overall share of renewable energy in total primary energy supply is also rising. Thus the share of renewable energy is rising in Germany, Italy, France, the United Kingdom, the European Union, the United States, Canada and Japan. While Mexico is the only country with a relatively low share and also negative growth rate, other newly industrialized countries like India show good developments. Being the countries with the highest share of renewables and also positive growth rates Brazil and Indonesia continue to rely mainly on hydropower. Many large hydropower projects are not viable in terms of sustainability, given their profound negative impacts on the environment. The strong growth rates of Italy, the UK and Korea result in a very good CCPI evaluation in this sector: only Malta and Belgium have reached a better score.

Figure 5: G20 – Total Primary Energy Supply per GDP



At global level the energy intensity of the economy (total primary energy supply/GDP) is steadily decreasing. For individual countries this decline may be attributed to a variety of causes, such as rising energy efficiency; structural economic change towards services industries away from energy-intensive manufacturing; or the relocation of energy-intensive industries to other countries. The G20 average (6.5 MJ/US$) is consistent with the global average (6.6 MJ/US$). Except for Brazil and Russia all G20 members show negative growth rates. It is noticeable that the majority of countries is located below the global and G20 average, with only Russia, South Africa, China, Canada and Korea featuring above.

Figure 6: G20 – CO_2 per Total Primary Energy Supply



No clear Trend is observable regarding the carbon intensity of energy supply (CO_2/TPES): 10 G20 members have positive growth rates, 10 are reducing CO_2 per TPES. Overall, the G20 average (58.9 t CO_2/TPES) is slightly above the global average (56.8 t CO_2/TPES). The countries with the current highest level of CO_2 per TPES (Australia, China and South Africa) decreased their carbon intensity over the last 5 years. Japan has by far the largest growth rate. Probably mainly due to the closure of all of Japan's 48 nuclear reactors after the Fukushima disaster and the resulting increased use of natural gas, which led to a higher carbon intensity of Japan's energy supply. While Brazil's high share of renewables results in a relatively low level of CO_2 per TPES, France's low level is mainly due to the high dependence on nuclear energy.

7. Country Group Results

The following tables show countries categorised by groups which enables a comparison of emitters with more or less similar basic conditions.

Table 2: Climate Change Performance Index for OECD Member Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
4	Denmark	71.19	22	Germany	58.39	36	Norway	54.65
5	United Kingdom	70.13	23	Finland	58.27	41	Spain	52.63
6	Sweden	69.91	26	Slovak Republic	57.83	42	New Zealand	52.41
7	Belgium	68.73	27	Iceland	57.25	45	Austria	50.69
8	France	65.97	28	Mexico	57.04	50	Turkey	47.25
11	Italy	62.98	29	Czech Republic	57.03	51	Estonia	47.24
12	Ireland	62.65	31	Slovenia	56.87	56	Canada	38.74
13	Luxembourg	62.47	32	Poland	56.09	57	Korea	37.64
14	Switzerland	62.09	33	Greece	55.06	58	Japan	37.23
17	Hungary	60.76	34	United States	54.91	59	Australia	36.56
19	Portugal	59.52	35	Netherlands	54.84			

Table 3: Climate Change Performance Index for EU Member Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
4	Denmark	71.19	16	Latvia	61.38	31	Slovenia	56.87
5	United Kingdom	70.13	17	Hungary	60.76	32	Poland	56.09
6	Sweden	69.91	18	Romania	60.39	33	Greece	55.06
7	Belgium	68.73	19	Portugal	59.52	35	Netherlands	54.84
8	France	65.97	20	Lithuania	58.65	37	Bulgaria	53.85
9	Cyprus	65.12	21	Croatia	58.43	41	Spain	52.63
11	Italy	62.98	22	Germany	58.39	45	Austria	50.69
12	Ireland	62.65	23	Finland	58.27	51	Estonia	47.24
13	Luxembourg	62.47	26	Slovak Republic	57.83			
15	Malta	61.82	29	Czech Republic	57.03			

Table 4: Climate Change Performance Index for G7 Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
5	United Kingdom	70.13	22	Germany	58.39	58	Japan	37.23
8	France	65.97	34	United States	54.91			
11	Italy	62.98	56	Canada	38.74			

Table 5: Climate Change Performance Index for Countries in Transition

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
16	Latvia	61.38	26	Slovak Republic	57.83	44	Belarus	51.18
17	Hungary	60.76	29	Czech Republic	57.03	46	Ukraine	49.81
18	Romania	60.39	31	Slovenia	56.87	51	Estonia	47.24
20	Lithuania	58.65	32	Poland	56.09	53	Russian Federation	44.34
21	Croatia	58.43	37	Bulgaria	53.85	60	Kazakhstan	32.97

Table 6: Climate Change Performance Index for Newly Industrialised Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
10	Morocco	63.76	39	Malaysia	53.49	50	Turkey	47.25
24	Indonesia	58.21	40	Algeria	53.30	52	Chinese Taipei	45.45
25	India	58.19	43	Brazil	51.90	55	Singapore	42.81
28	Mexico	57.04	47	China	48.60	57	Korea	37.64
30	Egypt	56.96	48	Argentina	48.34			
38	South Africa	53.76	49	Thailand	48.16			

Table 7: Key Data for the 10 Largest CO_2 Emitters

Country	CCPI Rank 2016	CCPI Rank 2015	Share of Global GDP	Share of World Population	Share of Global CO_2 Emissions*	Share of Global Primary Energy Supply
Germany	22	25	3.40%	1.15%	2.36%	2.35%
India	25	31	6.77%	17.56%	5.81%	5.73%
United States	34	46	16.74%	4.45%	15.90%	16.16%
China	47	50	16.51%	19.21%	28.03%	22.33%
Russian Federation	53	52	2.56%	2.01%	4.79%	5.40%
Islamic Republic of Iran	54	57	1.21%	1.09%	1.63%	1.69%
Canada	56	58	1.54%	0.49%	1.67%	1.87%
Korea	57	53	1.80%	0.71%	1.78%	1.95%
Japan	58	55	4.71%	1.79%	3.84%	3.36%
Saudi Arabia	61	61	1.55%	0.41%	1.47%	1.42%
Total			56.79%	48.86%	67.28%	62.24%

*energy-related emissions

Performance Very good | Good | Moderate | Poor | Very poor

8. Sources and Further Reading Recommendations

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Annex: Key Data for all Countries Covered by the CCPI

Country	CCPI Rank* 2016	2015	Share of Global GDP	Share of World Population	Share of Global CO_2 Emissions**	Share of Global Primary Energy Supply
Denmark	4	4	0.21%	0.08%	0.12%	0.13%
United Kingdom	5	6	2.58%	0.90%	1.39%	1.41%
Sweden	6	5	0.40%	0.13%	0.12%	0.36%
Belgium	7	7	0.44%	0.16%	0.28%	0.42%
France	8	14	2.37%	0.93%	0.98%	1.87%
Cyprus	9	8	0.02%	0.01%	0.02%	0.01%
Morocco	10	11	0.24%	0.46%	0.16%	0.14%
Italy	11	16	1.89%	0.85%	1.05%	1.15%
Ireland	12	12	0.20%	0.06%	0.11%	0.10%
Luxembourg	13	27	0.04%	0.01%	0.03%	0.03%
Switzerland	14	10	0.39%	0.11%	0.13%	0.20%
Malta	15	22	0.01%	0.01%	0.01%	0.01%
Latvia	16	28	0.04%	0.03%	0.02%	0.03%
Hungary	17	15	0.20%	0.14%	0.12%	0.17%
Romania	18	20	0.29%	0.28%	0.21%	0.23%
Portugal	19	9	0.26%	0.15%	0.14%	0.16%
Lithuania	20	18	0.07%	0.04%	0.03%	0.05%
Croatia	21	33	0.08%	0.06%	0.05%	0.06%
Germany	22	25	3.40%	1.15%	2.36%	2.35%
Finland	23	30	0.20%	0.08%	0.15%	0.24%
Indonesia	24	26	2.38%	3.51%	1.32%	1.58%
India	25	31	6.77%	17.56%	5.81%	5.73%
Slovak Republic	26	17	0.14%	0.08%	0.10%	0.13%
Iceland	27	13	0.01%	0.00%	0.01%	0.04%
Mexico	28	19	1.85%	1.66%	1.40%	1.41%
Czech Republic	29	23	0.30%	0.15%	0.31%	0.31%
Egypt	30	24	0.91%	1.15%	0.57%	0.57%
Slovenia	31	21	0.06%	0.03%	0.04%	0.05%
Poland	32	42	0.83%	0.54%	0.91%	0.72%
Greece	33	34	0.26%	0.15%	0.21%	0.17%
United States	34	46	16.74%	4.45%	15.90%	16.16%
Netherlands	35	40	0.75%	0.24%	0.49%	0.57%
Norway	36	32	0.28%	0.07%	0.11%	0.24%
Bulgaria	37	44	0.11%	0.10%	0.12%	0.12%
South Africa	38	37	0.68%	0.75%	1.31%	1.04%
Malaysia	39	49	0.69%	0.42%	0.64%	0.66%
Algeria	40	41	0.52%	0.55%	0.35%	0.35%
Spain	41	29	1.43%	0.65%	0.73%	0.86%
New Zealand	42	35	0.14%	0.06%	0.10%	0.14%
Brazil	43	43	3.01%	2.81%	1.41%	2.17%
Belarus	44	36	0.17%	0.13%	0.18%	0.20%
Austria	45	39	0.37%	0.12%	0.20%	0.25%
Ukraine	46	38	0.40%	0.64%	0.82%	0.86%
China	47	50	16.51%	19.21%	28.03%	22.33%
Argentina	48	48	0.77%	0.58%	0.57%	0.60%
Thailand	49	45	0.96%	0.94%	0.77%	0.99%
Turkey	50	51	1.23%	1.06%	0.88%	0.86%
Estonia	51	47	0.03%	0.02%	0.06%	0.04%
Chinese Taipei	52	54	0.93%	0.33%	0.77%	0.80%
Russian Federation	53	52	2.56%	2.01%	4.79%	5.40%
Islamic Republic of Iran	54	57	1.21%	1.09%	1.63%	1.69%
Singapore	55	56	0.42%	0.08%	0.14%	0.19%
Canada	56	58	1.54%	0.49%	1.67%	1.87%
Korea	57	53	1.80%	0.71%	1.78%	1.95%
Japan	58	55	4.71%	1.79%	3.84%	3.36%
Australia	59	60	1.04%	0.33%	1.21%	0.95%
Kazakhstan	60	59	0.39%	0.24%	0.76%	0.60%
Saudi Arabia	61	61	1.55%	0.41%	1.47%	1.42%
			87.78%	70.75%	88.90%	86.50%

* The underlying data that is provided by the International Energy Agency has been changed retrospectively. That influences the comparability of the results between the different Index years. This year the data changes mostly affected Australia, China and Thailand.

** energy-related emissions

Performance Very good Good Moderate Poor Very poor

Germanwatch

Following the motto "Observing, Analysing, Acting", Germanwatch has been actively promoting global equity and the preservation of livelihoods since 1991. In doing so, we focus on the politics and economics of the North and their worldwide consequences. The situation of marginalised people in the South is the starting point of our work. Together with our members and supporters as well as with other actors in civil society, we intend to represent a strong lobby for sustainable development. We attempt to approach our goals by advocating for the prevention of dangerous climate change, food security, and compliance of companies with human rights.

Germanwatch is funded by membership fees, donations, grants from "Stiftung Zukunftsfähigkeit" (Foundation for Sustainability) as well as grants from various other public and private donors.

You can also help achieve the goals of Germanwatch by becoming a member or by donating to:
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CAN Europe

Climate Action Network Europe (CAN-E) is Europe's largest coalition working on climate and energy issues. With over 120 member organisations in more than 30 European countries – representing over 44 million citizens – CAN Europe works to prevent dangerous climate change and promote sustainable climate and energy policy in Europe.

The Climate Action Network (CAN) is a worldwide network of over 950 Non-Governmental Organizations (NGOs) in more than 110 countries, working to promote government and individual action to limit human-induced climate change to ecologically sustainable levels.

The vision of CAN is a world striving actively towards and achieving the protection of the global climate in a manner that promotes equity and social justice between peoples, sustainable development of all communities, and protection of the global environment. CAN unites to work towards this vision.

CAN's mission is to support and empower civil society organisations to influence the design and development of an effective global strategy to reduce greenhouse gas emissions and ensure its implementation at international, national and local levels in the promotion of equity and sustainable development.

GERMANWATCH

CAN
CLIMATE ACTION NETWORK
Europe