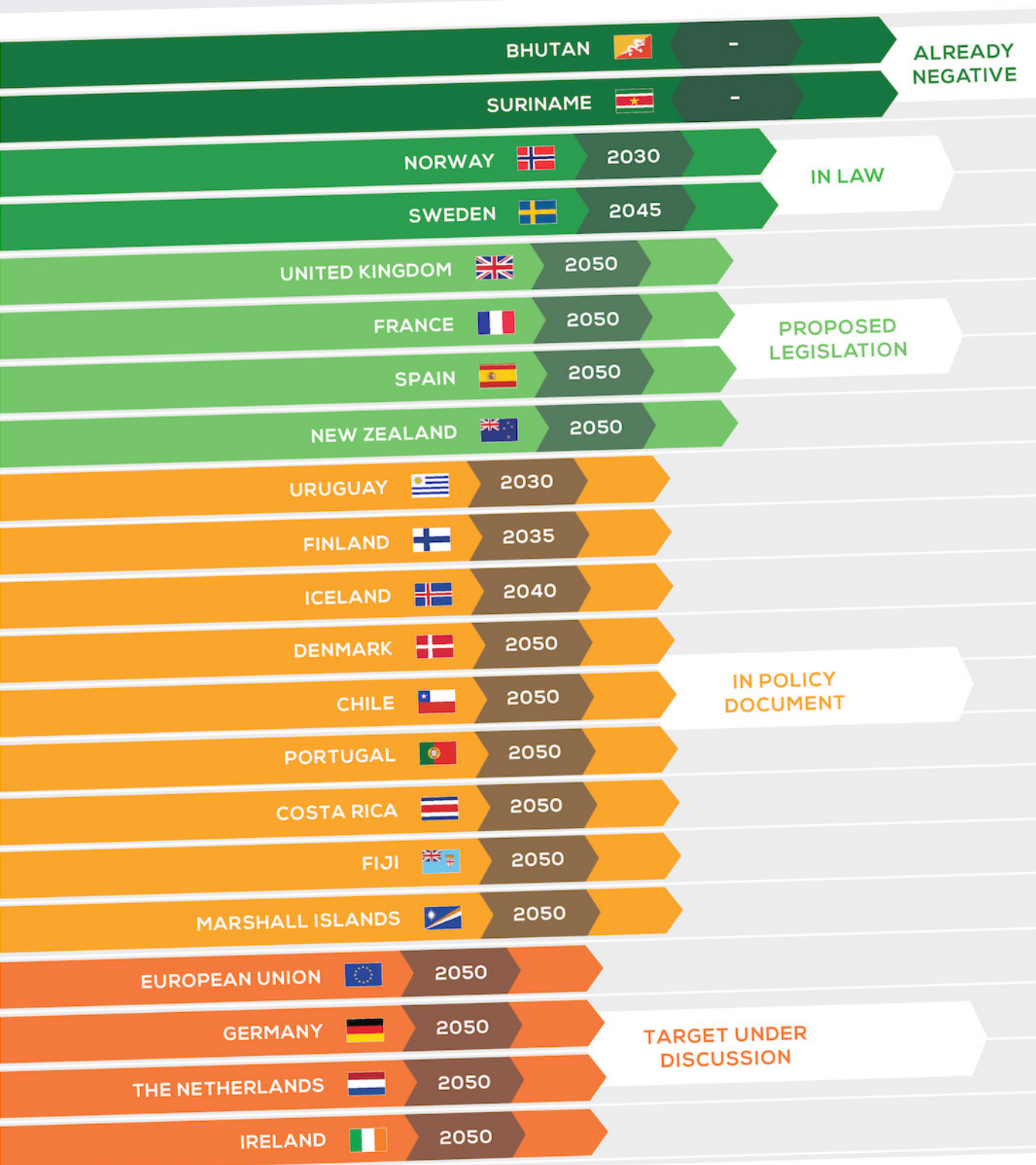


# COUNTDOWN TO ZERO

Plotting progress towards delivering net zero emissions by 2050.



## EXECUTIVE SUMMARY

'Science tells us that if all nations adopt this target, there is a good chance that we will live up to the commitments that we made at the Paris summit, and keep climate change within safe boundaries.'

Isabella Lövin, Deputy Prime Minister of Sweden, April 2018<sup>1</sup>

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) issued a simple and direct message to governments: if you want to keep climate change within the limits that you have decided are acceptable, you need to bring global emissions to zero within three decades.<sup>2</sup>

The IPCC Special Report on the 1.5 degrees Celsius global warming target took the concept of net zero out from the specialised environment of science and climate change policy into plain sight on the public and political stage. Now, all governments are aware that if they are to meet the pledge they signed up to in the Paris Agreement and attempt to keep global warming to 1.5°C, collectively need to reach net zero by 2050.

Even before 2018, a small number of governments, regional authorities and businesses had net zero targets in place. In 2017, Sweden put its target in national legislation.<sup>3</sup> Many companies had set carbon neutrality targets several years before that – and a handful including Google<sup>4</sup> and Microsoft<sup>5</sup> had already met them.

But now, 'net zero' is on the international agenda as an explicit indicator of whether a nation, region, city or business is committed to delivering the Paris Agreement. It is not the only indicator, because by itself, a target does not reduce greenhouse gas emissions at all. A clear plan for achieving the target, including interim steps, is critically important. And on the international stage, the targets for 2030, which governments initially set out in their Nationally Determined Contributions (NDCs) to the United Nations climate convention in 2015, are also a key indicator of commitment.<sup>6</sup>

Nevertheless – net zero is a concept deserving of specific attention. Because, as the UK's Committee on Climate Change (CCC) expressed it when making its official recommendation for the UK's 2050 target, aiming for and then reaching net zero is a country's (or a region's or a city's or a company's) 'contribution to stopping global warming.'<sup>7</sup> A second reason is that net zero is logically a major force on business plans in a variety of sectors – construction, heavy

1 <https://www.theguardian.com/environment/2018/apr/17/to-lead-on-climate-countries-must-commit-to-zero-emissions>

2 <https://www.ipcc.ch/sr15/>

3 <https://unfccc.int/news/sweden-plans-to-be-carbon-neutral-by-2045>

4 [https://storage.googleapis.com/gweb-sustainability.appspot.com/pdf/Google\\_2018-Environmental-Report.pdf](https://storage.googleapis.com/gweb-sustainability.appspot.com/pdf/Google_2018-Environmental-Report.pdf)

5 <https://www.microsoft.com/en-us/corporate-responsibility>

6 Adequacy of and progress towards meeting NDCs is documented in the Climate Action Tracker <https://climateaction-tracker.org>, with analysis released updated.

7 <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

industry, aviation and agriculture among them – as it gives clarity on the emissions reduction trajectory companies will have to follow in the next three decades.

In this report, we pull together key facts on the world's move towards meeting the IPCC's challenge of reaching net zero emissions around 2050. Among them, we show that:

- **17 nations** are planning to set, or have already set net zero targets, to be reached in or before 2050; two already absorb more greenhouse gases than they produce;
- **34 companies** with annual incomes above \$1bn have set or have met net zero targets;
- about **16% of global GDP** is covered by the net zero targets of nations, regions and cities.

We also set out the scientific and political rationale for net zero, outline the various types of target that can be set, and look at why net zero is set to become a more widespread concept in the coming few years.



## NET ZERO — WHY?

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In 1992, governments signed the United Nations Framework Convention on Climate Change (UNFCCC). Perhaps its best-known and most fundamental objective is in Article 2, where governments collectively commit to “...stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”

At the time, there was no standard definition or shorthand for ‘dangerous’ climate change – nor was it clear what level of ‘stabilisation’ would be required. The 2006 Stern Review of climate change economics spoke of stabilising atmospheric greenhouse gas concentrations at a level equivalent to between 500-550 parts per million of carbon dioxide (CO<sub>2</sub>).<sup>8</sup> Analyses focussed on different levels, but the basic concept set out in the Stern Review – that ‘stabilisation’ was best defined as a sustained level in the atmosphere of a basket of greenhouse gases equivalent to a certain concentration of CO<sub>2</sub> – had a long lifetime in climate change policy circles.

In 2009, this approach was challenged by scientists based at Oxford University.<sup>9</sup> They published research showing that the eventual level at which the global temperature would stabilise was determined by the cumulative level of carbon dioxide that humanity put into the atmosphere. It did not particularly matter when the CO<sub>2</sub> was emitted, they found; the total amount released would be the most direct factor determining the eventual temperature rise. Other research confirmed this conclusion.

In terms of where climate policy should aim, this scientific advance carried four main implications:

- global warming (and by extension, the wider impacts of climate change) would not stop until CO<sub>2</sub> emissions came to an end; reducing CO<sub>2</sub> emissions, stabilising them at some level, would not be sufficient
- scientists could attempt to calculate the total cumulative amount of CO<sub>2</sub> that humanity could emit in order to hit a certain temperature target. For example, the initial Oxford research estimated the ‘carbon budget’ for a 2°C global warming target at 3.7 trillion tonnes
- carbon dioxide could be treated differently from those greenhouse gases which disappear from the atmosphere relatively quickly
- if it proved impossible to reduce CO<sub>2</sub> emissions to zero, it would be necessary, in order to halt climate change, to absorb an amount of greenhouse gases from the atmosphere each year equivalent to those emissions that remained. This would bring the world to

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<sup>8</sup> Equivalence is typically determined by comparing the warming effect of a molecule of the gas against the warming effect of a molecule of CO<sub>2</sub>, over a given timescale (typically 100 years – known as GWP-100). This takes account not only of the warming produced by the molecule but also its longevity in the atmosphere.

<sup>9</sup> <https://www.nature.com/articles/nature08019>

'net zero' CO<sub>2</sub> emissions. Currently, CO<sub>2</sub> is the only greenhouse gas for which large-scale absorption – 'negative emissions' – is feasible; absorbing more of it, to compensate for ongoing emissions of other greenhouse gases, could bring the world to a state of net zero emissions overall.

The approach of working out 'carbon budgets' for different levels of climate change became standard in the next few years. So did understanding that halting climate change and thereby fulfilling the ultimate objective of the UN climate convention entailed bringing CO<sub>2</sub> emissions down to net zero. In the 2013-4 Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), governments officially recognised that limiting impacts and risks of climate change would entail '... that global net emissions of CO<sub>2</sub> eventually decrease to zero...' <sup>10</sup>

In 2015, governments went one step beyond agreeing that emissions should reach net zero. In the Paris Agreement, they vowed that emissions would reach net zero, pledging '...to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.' <sup>11, 12</sup>

However, it was already clear that reaching net zero on this timescale might not be sufficient to deliver the Paris Agreement's global warming target – to limit temperature rise to 'well below 2 Celsius' and 'make efforts' to keep it to 1.5°C.

Parties to the Paris Agreement commissioned the IPCC to compile a Special Report on the 1.5°C target – among other things, to work out what would be needed to deliver it. In October 2018 the IPCC published the report, concluding that to have a 50% chance of keeping global warming to 1.5°C, carbon dioxide emissions should reach net zero by 2050, with emissions of other greenhouse gases tightly constrained as well. Although the report is less specific on a global date for net zero across all greenhouse gases, the implication is that this would need to occur around 2070.

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10 <https://www.ipcc.ch/report/ar5/syr/>

11 [https://unfccc.int/files/meetings/paris\\_nov\\_2015/application/pdf/paris\\_agreement\\_english\\_.pdf](https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf)

12 The wording of this clause allows room for slightly different interpretations, but a commonsense one is clearly that overall greenhouse gas emissions reach net zero.



## NET ZERO PLEDGES AND THE PARIS AGREEMENT

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The existence of a net zero pledge with a target date in line with the conclusions of the IPCC's Special Report is probably the simplest proxy measure that exists of whether a country is committed to delivering its share of the Paris Agreement's temperature targets.

It is of course far from being the whole story. For one thing, a target is just a target – without policies to cut emissions progressively towards that target, there is a substantial chance that it will not be achieved. A target acquires greater political force if it is enshrined in national law and if there are interim targets for which politicians are held accountable.

A more scientific caveat on use of a net zero target as an indicator of 'Paris-compatibility' is that a nation's impact on the eventual extent of climate change is related more closely to the total amount of emissions it releases rather than to the date of net zero. Higher emissions in the short-term followed by steeper cuts later is going to cause more global warming than steep cuts followed by more gentle ones – which is another powerful reason for setting interim targets.

For net zero dates, the notion of a 'fair' share is also tied up with considerations of equity and historical emissions. For some developing countries it is also reasonable to assume – as does the Paris Agreement itself, in regard of targets for 2030 – that finance from more prosperous nations will enable them to cut emissions faster and further.

Nevertheless; given all these important caveats, if a country does not have a target set for bringing emissions to net zero, it is hard to argue that it has proven that it is committed to delivering its share of the Paris Agreement, which all governments agreed in 2015. So, while not being a perfect measure of a country's commitment to delivering the Paris targets, the adoption of a net zero target on a timescale compatible with the IPCC's findings is probably the single best measure that exists.

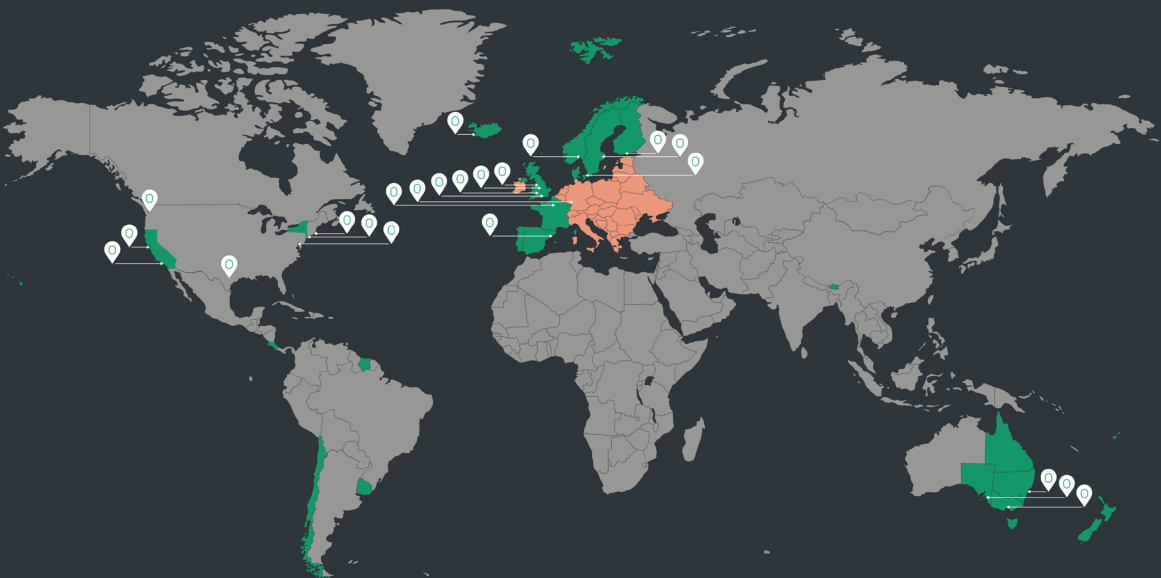
Energy&Climate  
INTELLIGENCE UNIT

# NET ZERO

IN 2050 OR BEFORE

LEGISLATION OR HEAD OF STATE COMMITMENT

EXPLORING NET ZERO TARGET



UNITED KINGDOM – FRANCE – SPAIN – SWEDEN – NORWAY – DENMARK – CHILE – FINLAND – PORTUGAL – NEW ZEALAND – COSTA RICA – URUGUAY – ICELAND – FIJI – BHUTAN – SURINAME – MARSHALL ISLANDS – CALIFORNIA (US) – NEW YORK STATE (US) – HAWAII (US) – CATALONIA (SPAIN) – NSW (AUS) – VICTORIA (AUS) – QUEENSLAND (AUS) – SOUTH AUSTRALIA – ACT (AUS) – EUROPEAN UNION – GERMANY – THE NETHERLANDS – IRELAND



NEW YORK CITY – LOS ANGELES – LONDON – PARIS – WASHINGTON DC – SAN FRANCISCO – SEATTLE – SYDNEY – BOSTON – STOCKHOLM – BARCELONA – COPENHAGEN – AUSTIN – MELBOURNE – HELSINKI – MANCHESTER – OSLO – NOTTINGHAM – ADELAIDE – BRISTOL – HEIDELBERG – REYKJAVIK

## NET ZERO — DEFINITIONS

Although net zero is conceptually simple, it is not automatically precisely defined. Rather, a range of definitions exists, some of which carry important implications for the overall impact on climate change.<sup>13</sup>

### Which gases?

Net zero can be set as a target for all greenhouse gases, or for CO<sub>2</sub> only. In some cases, such as a business where the vast proportion of emissions stem from energy use, a CO<sub>2</sub>-only target would not mean something very different from an all-greenhouse-gas target. In other cases – for example, the climate change law being discussed in New Zealand, where the single biggest source of greenhouse gas emissions is methane from livestock – the difference is highly significant.

When net zero is mentioned in a policy document or as a political commitment, the scope of the target is not always clear. When set in a law, it has to be clear, for obvious reasons.

### Which sectors?

In principle a net zero target can cover specific sectors within an economy. That can occur in practice too – the UK's National Farmers' Union (NFU), for example, has set the ambition of making British farming net zero by 2040. More often at national level, though, it is set either for the whole economy, or for the whole economy minus international aviation and shipping.

Nations sometimes give, as the reason for excluding these sectors, is that both are in principle covered by agreements under United Nations bodies other than the climate convention – the International Civil Aviation Organization (ICAO) and the International Maritime Organisation (IMO), respectively.<sup>14, 15</sup>

Again, in some cases, omitting international aviation and shipping from national net zero accounting would make little difference. In other cases – such as an island nation where international tourism makes up a major proportion of the economy – exclusion would make a major difference to the true impact of a net zero commitment. And again, declarations of a net zero target are not always clear whether these sectors are covered or not.

### Are international offsets allowed?

The idea that a nation (or indeed a region, city or company) can be credited for reducing emissions by paying another entity to do it has been enshrined in international climate policy

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<sup>13</sup> Business definitions of net zero, or carbon neutrality, also include reporting on the extent of business activities covered – Scope One, Two or Three <https://ghgprotocol.org>

<sup>14</sup> <https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx>

<sup>15</sup> <http://www.imo.org/en/MediaCentre/HotTopics/GHG/Pages/default.aspx>



ever since the 1997 Kyoto Protocol. The appeal to governments and businesses is that some may find it cheaper to 'offset' – paying for reductions elsewhere – than to cut their own emissions; while for other countries and businesses, the attraction lies in being the party that is paid. And indeed, some countries, regions, cities and businesses setting net zero targets explicitly endorse the use of meeting them partly through international offsetting.

However, there are several reasons to believe this will not be as robust as cutting (or absorbing) emissions in-country. Carbon markets have been plagued in the past with fraud, double-counting and 'gaming the system'. Even without these real-world problems, the reality is that a government can only oversee issues occurring within its own borders. For example, Country A may invest in restoring Country B's forests on the basis that CO<sub>2</sub> absorbed will be included in Country A's carbon accounting. But if a later government in Country B reverses policy and clears the forests, any positive impact on climate change vanishes (along with Country A's financial investment).

Another argument against international offsetting is that it effectively delays fundamental changes in energy, transport, industry and agriculture which once in place will lock in a zero-emissions future. Yet another is that if many countries seek to buy emissions reductions elsewhere, from (presumably poorer) nations that are also reducing their own net emissions, places where such services can be bought will rapidly become scarce.

So, while narrow economic logic may favour use of international offsetting, real-world experience and political logic indicates that a target is stronger when offsetting is precluded.

## THE FEASIBILITY OF NET ZERO

Reducing net greenhouse gas emissions to zero – or even reducing net carbon dioxide emissions to zero – on the timescale set out by the IPCC Special Report may seem a daunting task. There is no doubt that the turnaround time is short: emissions are currently rising (after a three-year plateau in the middle of the decade), and the ask is to halve them by 2030 en route to elimination 20 years later.<sup>16</sup> That is on a global basis: considerations of equity suggest that some countries would be expected to reach the target ahead of mid-century.

However, no serious piece of analysis has concluded that it cannot be done:

- the IPCC acknowledges that reaching net zero CO<sub>2</sub> emissions by 2050 requires changes that ‘... are unprecedented in terms of scale, but not necessarily in terms of speed, and imply deep emissions reductions in all sectors, a wide portfolio of mitigation options and a significant upscaling of investments in those options.’ But it does not find any terminal roadblocks;
  - the Energy Transitions Commission (ETC), a global body including major corporations from energy and industry, concluded that for so-called ‘harder-to-decarbonise’ sectors – heavy industry, heavy road transport, shipping and aviation – OECD nations could reach net zero within each of these sectors – ie, even without investing in negative emissions from land use change – by 2050, and developing countries a decade later.<sup>17</sup> If enacted efficiently, this would cost less than 0.5% of GDP;
  - the UK’s Royal Society and Royal Academy of Engineering concluded that the world has enough potential for negative emissions in order to achieve global net zero by 2050<sup>18</sup>;
  - at country level, analyses for Sweden, the UK and New Zealand, using sectoral bottom-up and modelling approaches, have all concluded that net zero is feasible and affordable.<sup>19</sup>
- <sup>20</sup> <sup>21</sup> It is worth pointing out, also, that these are not the easiest nations to decarbonise; none has, for example, the solar energy potential of low-latitude countries, while the latter two are island nations, which compromises integration of energy systems and heightens reliance on international transport;
- the European Commission concludes that the bloc can reach net zero by 2050<sup>22</sup> – a finding backed by other analyses from, for example, the European Climate Foundation (ECF).<sup>23</sup>

<sup>16</sup> The IPCC’s precise phrase is: “In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO<sub>2</sub> emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range)” – which approximates to a halving from 2019 emission levels.

<sup>17</sup> <http://www.energy-transitions.org/mission-possible>

<sup>18</sup> <https://www.raeng.org.uk/news/news-releases/2018/september/greenhouse-gas-removal-could-make-the-uk-carbon-ne>

<sup>19</sup> <https://www.government.se/articles/2016/07/a-climate-policy-framework-and-a-climate-and-clean-air-strategy-for-sweden/>

<sup>20</sup> <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

<sup>21</sup> <https://www.productivity.govt.nz/inquiry-content/3254?stage=4>

<sup>22</sup> [https://ec.europa.eu/clima/policies/strategies/2050\\_en](https://ec.europa.eu/clima/policies/strategies/2050_en)

<sup>23</sup> <https://europeanclimate.org/a-net-zero-emissions-european-society-by-2050-is-within-reach-but-getting-there-starts-today/>

Though naturally varying in their approach and precise findings, a number of conclusions are general to all of these analyses:

- the goal is made more attainable through starting now;
- strong and predictable policy drivers (such as a rising carbon price) will make the process more efficient;
- although there will be an economic cost, there will be economic and social benefits too, such as reduced reliance on fossil fuel imports and cleaner air.

Country	Target date	Formality	Does the target cover all GHGs?	Does the target exclude international offsets?	Does the target include international aviation and shipping?	Does the target include interim targets?
Suriname	N/A	Achieved	N/A	N/A	N/A	N/A
Bhutan	N/A	Achieved	N/A	N/A	N/A	N/A
Norway	2030	In law	Yes	No	No	Yes
Uruguay	2030	In policy document	Yes	Unclear	No	No
Finland	2035	In policy document	Yes	Yes	No	No
Iceland	2040	In policy document	Yes	Yes	No	No
Sweden	2045	In law	Yes	No	No	Yes
Germany	2050	Target under discussion	Yes	Unclear	No	No
United Kingdom	2050	Proposed legislation	Yes	No	Yes	Yes
France	2050	Proposed legislation	Yes	Unclear	No	No
Spain	2050	Proposed legislation	Yes	Unclear	No	Yes
The Netherlands	2050	Target under discussion	Yes	Unclear	No	Yes
Ireland	2050	Target under discussion	Unclear	Unclear	Unclear	Yes
Denmark	2050	In policy document	Yes	Yes	No	No
Chile	2050	In policy document	Yes	Unclear	Unclear	Unclear
Portugal	2050	In policy document	Yes	Yes	No	No
New Zealand	2050	Proposed legislation	No	No	No	Yes
Costa Rica	2050	In policy document	Yes	Yes	No	No
Fiji	2050	In policy document	Yes	Unclear	No	Yes
Marshall Islands	2050	In policy document	Yes	Unclear	No	No

**Table 1: Countries with a net zero commitment by 2050** Source: ECIU data

## TRACKING NET ZERO

If the world needs to be at net zero emissions around mid-century to deliver a reasonable chance of keeping global warming below the 1.5°C target, then a key indicator of whether governments are collectively internalising that target and timeline is how many have set national net zero targets with a compatible date. The same is true – although they did not sign the Paris Agreement – of regions, cities and companies.

The existence of net zero targets is also important for steering investment from high-carbon to low-carbon. So, the proportion of global GDP covered by net zero pledges is a useful measure here.

In this report we give the initial results from our Net Zero Tracker – an online tool that will collate and map net zero commitments as they spread across the world.

This initial analysis shows that as of 25th June 2019:

- **17 countries** have set or have declared they will set net zero emissions targets, with target dates in or before 2050;
- of these, **two countries are already beyond net zero** (Bhutan and Suriname), both of which absorb more carbon dioxide than they emit;
- of the remaining 13, two (Norway and Sweden) have set their targets **in national legislation**, and a further four are in the process of legislating. The rest of the commitments fall in policy documents of some kind;
- the commitments of some developing countries to achieve net zero emissions by 2050 (such as Fiji) **depend on financial support** from richer nations through mechanisms such as the Green Climate Fund;
- **at least 11 states and regions** globally have set net zero targets, including major players such as California. In some cases, as with Australian states, these commitments mean that large tracts of the nation are covered by net zero targets even when the national government itself is not even debating the issue;
- **at least 23 cities** have set net zero emissions targets with dates before 2050, including some of the world's biggest – such as New York, Los Angeles, London and Barcelona;
- the **combined annual GDP** of nations, states and cities with net zero targets before 2050 is around \$13.7 trillion – about 16% of the global economy<sup>24</sup>;
- **at least 34 companies** with annual revenues over \$1bn have set corporate net zero emissions targets before 2050. In some cases, the dates are considerably earlier.

<sup>24</sup> This is without double-counting: for example, Los Angeles' GDP is not included in the calculation as it is incorporated in the figure for California, which is included – neither is Scotland's, as it is covered by the UK.

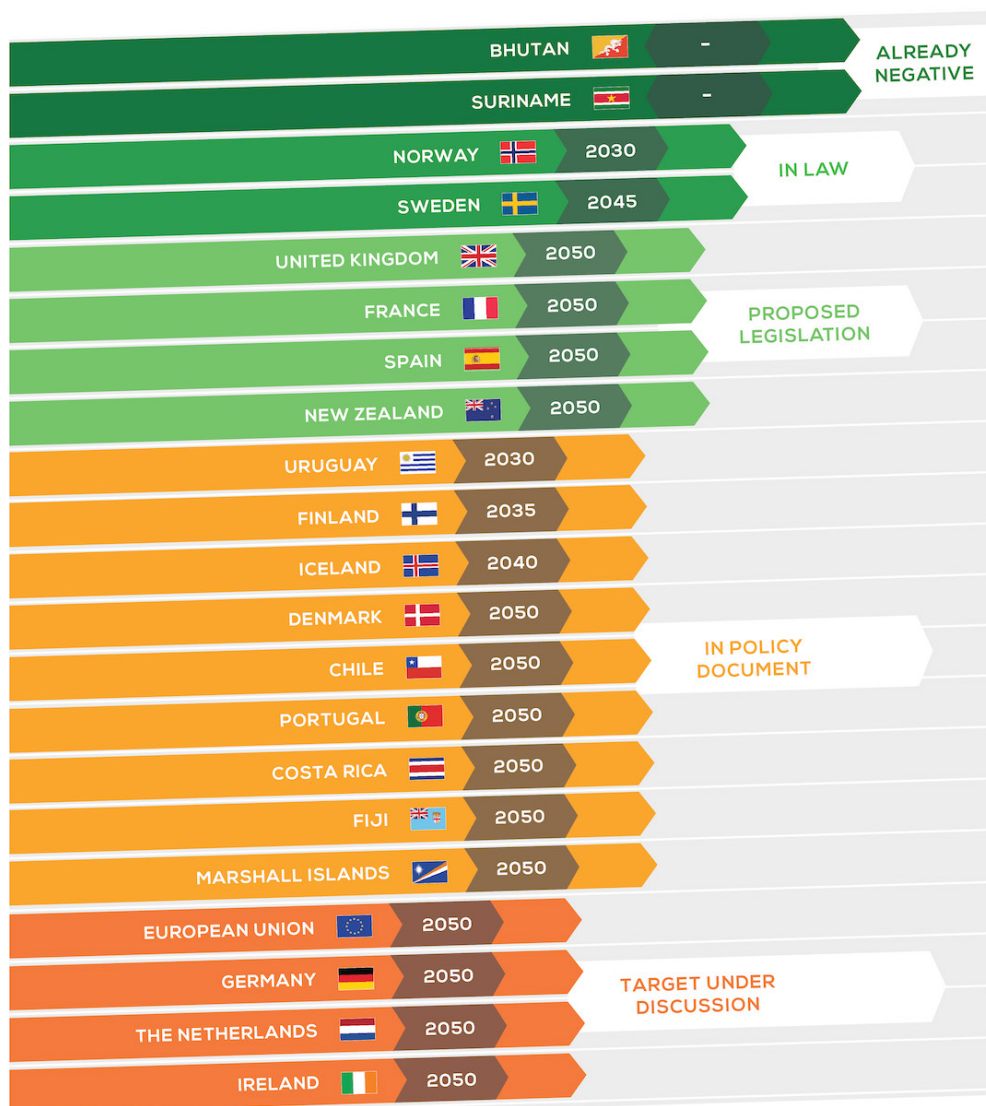
Within these raw numbers sit a number of wide details, reflecting – among other things – the likelihood of the country, region, city or company is moving seriously towards its target. For example, national commitments range from those in national law to those in policy documents. Some permit international offsetting, others do not; many do not specify. In some cases it is unclear whether the target covers carbon dioxide only, or all greenhouse gases.

Nevertheless, this first analysis shows that the ambition of reaching net zero is already shared across a wide swathe of national and local governments and the corporate sectors.

ENERGY &amp; CLIMATE INTELLIGENCE UNIT

## NET ZERO EMISSIONS RACE

## 2019 SCORECARD



## THE NEAR FUTURE

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A number of countries are contemplating setting net zero targets. And – particularly in Europe – as the concept of a ‘climate emergency’ spreads, it is also logical to think that more and more cities and regions will adopt net zero targets too.

Events within the European Union are especially interesting. Last week, the European Council narrowly failed to agree a net zero target for 2050, with a small group of nations opposed.<sup>25</sup> But the issue is not going away. With voters’ concerns rising across Europe, national governments may find it progressively harder to resist taking this route. As more and more EU states set their own national net zero goals, it also becomes harder for others to argue against the feasibility of doing so. Certainly, the hold-out positions of Estonia and the Czech Republic on economic grounds looks hard to justify already given that their per-capita GDPs are significantly higher than those of some nations supporting the proposal, such as Bulgaria and Romania.

Beyond Europe, the next focus of is those nations that have joined the Carbon Neutrality Coalition.<sup>26</sup> One of their agreed goals is to set national net zero targets on a Paris Agreement-compatible timescale. Many have, or are in the progress of doing so; but Canada, Colombia, Ethiopia, Germany, Luxembourg, Mexico and the Netherlands have all yet to set the ball in motion seriously.

This then leaves a number of wealthy nations (led by the United States, Australia and the Gulf States) that have yet to put the issue of net zero on the agenda, as well as many more in the developing world. Meanwhile one major emitter, Japan, has decided to set a target incompatible with the Paris Agreement, setting out to achieve net zero only ‘at the earliest possible time in the latter half of this century.’<sup>27</sup>

All nations agreed at the Paris summit to complete long-term low-greenhouse gas development strategies by 2020. Some have already published their strategies, though many more have not. These are logically a vehicle for future national net zero pledges.

If its bid to host COP26 in 2020 is successful, the UK, following adoption of its own world-leading net zero target, may decide to make this the ‘net zero COP’. It may focus diplomacy on promoting the features that make the UK target realistic, such as effective climate change legislation, a cross-party political consensus and a plan of investment in competitive low-carbon businesses. By so doing it could expand the network of net zero nations beyond the 17 described here and those already in the queue. Finance to assist developing countries embark for net zero will of course be a closely-related topic.

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25 <https://www.ft.com/content/881a50de-936e-11e9-aeal-2bld33ac3271>

26 <https://www.carbon-neutrality.global>

27 <https://www.climatechangenews.com/2019/06/12/japan-says-will-carbon-neutral-fails-set-timeline/>



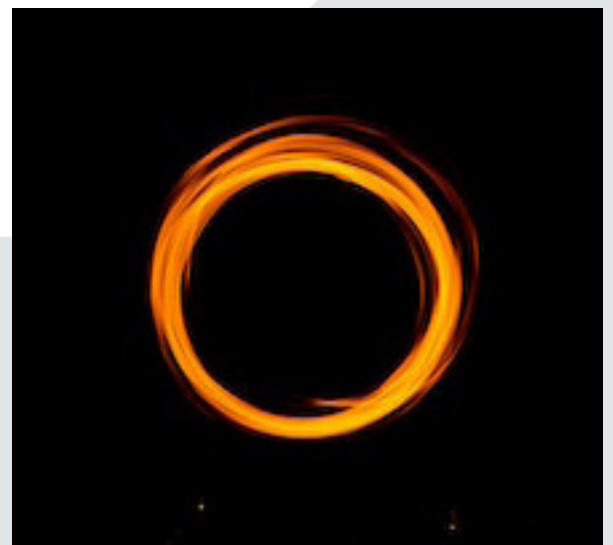
## CONCLUSIONS

In the popular terminology, net zero is now a 'thing'. Once restricted to the domain of scientists and climate policy experts, it is now gaining much wider traction, openly discussed and promoted by political leaders in countries that have set targets and in industries such as farming that have a key role to play in delivery.

This is hardly surprising, given that achievement of net zero emissions on an appropriate timescale is fundamental to delivery of the Paris Agreement. Increasingly, the existence of a net zero target and a plan to deliver it will become perhaps the most important single indicator of a country's commitment to halting climate change.

For business, the establishment of a net zero target – either by companies or in territories where they operate – is an aid to prudent investment, by demonstrating clearly the direction of travel, the timelines on which various degrees of emission reduction need to be achieved, and hence the costs and benefits of various investment decisions.

The discussions now taking place within the European Union and its member states, in specific nations such as New Zealand, and in boardrooms the world over mean that a progressively larger section of the world's GDP will be covered by net zero targets compatible with the Paris Agreement. The delivery of national long-term strategies to the UN climate convention, as agreed in the Paris summit, and establishment of COP26 as the 'net zero COP' offer near-term opportunities for accelerating uptake of net zero targets – and hence progressing towards delivering the ultimate goal of the UN climate convention, prevention of dangerous climate change.



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