

Getting EU climate and energy policy on track

Exploring a strong EU 2030 climate and energy package



**green
alliance...**

It is a critical time for EU and international climate deals

The EU will have to agree on a new climate and energy package for 2030 in 2014

2013

Green paper consultation
March – July 2013

2014

European Commission
White Paper January 2014

Expected joint stance
on 2030 package agreed
March 2014

European elections
May 2014

2015

The outcome will affect the next international climate deal

Climate Change
Conference COP 19
in Warsaw,
November 2013

Ban Ki-moon's climate
meeting at the UN
General Assembly in
September 2014

Climate Change
Conference COP
21 in Paris,
December 2015

How the 2020 policy
package has performed

In 2007 European leaders set out three important targets for 2020

Greenhouse gas target a mandatory 20% reduction across Europe from 1990 levels, with different targets for different member states.

Renewables target a mandatory target of 20% of energy to come from renewables (to include a minimum share of 10% in transport), with different targets for different member states.

Energy efficiency target a voluntary target of 20% improvement in the EU's energy efficiency.

Progress of the 2020 EU climate and energy policy package



The Renewable Energy Directive has led to **largest renewables market in world**.

The EU is the **largest carbon trading market in world** with 11,000 installations covered by the Emissions Trading System.

Increased pressure on laggard states has **improved environmental performance** eg early closure of coal power stations to reduce acid rain.

Much progress has been made in **creating a level playing field and reducing the regulatory burden** for businesses with some notable exceptions eg Carbon Floor Price.

International negotiation is stronger when EU acting as a bloc with **influence over climate policies in other countries** eg through the creation of carbon trading schemes.



Common ambition for greenhouse gas reduction has been politically significant but did not account for economic activity and proved to be too generous given recession.

There have been moves towards **energy market integration** but reluctance to fully integrate and to rely on other member states for energy security. Also there are questions about whether an energy only electricity market is an out of date aim.

Ecodesign policy has had some success but has been slow to cover a wider range of product types and needs to be reformed.

Mandatory emissions standards have been agreed for new cars and vans, significantly reducing both local pollution and carbon emissions, however the process has been long and the standards have been watered down several times.



The EU is unlikely to meet the **2020 target** of a 20 per cent improvement in Europe's energy efficiency despite recession.

There is **no carbon price signal** due to lack of political will behind EU ETS.

The UK and others have made **limited use of sharing infrastructure**.

There has been **lack of progress on developing key technology** such as carbon capture and storage.

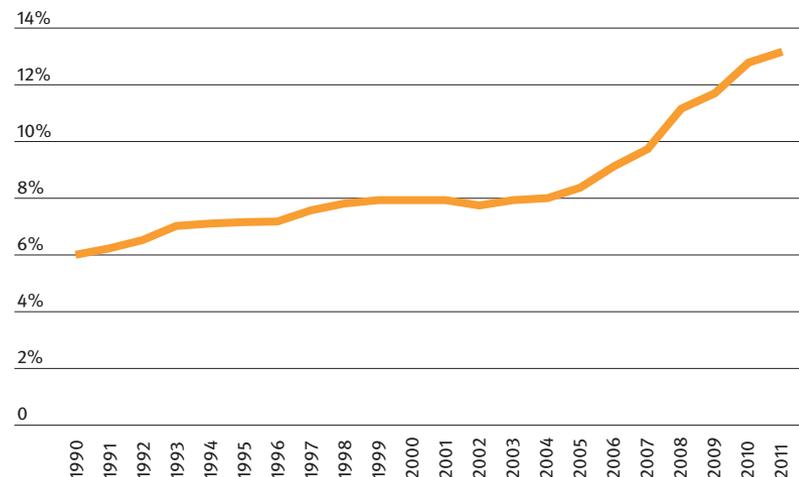
Why it was ground breaking

It set out a common EU ambition on greenhouse gas reduction which was politically significant and made individual member states feel more empowered as none of them had to go it alone.

The Renewable Energy Directive led to a step change in effort by many member states, including the UK.

There has been a 34 per cent increase in renewable energy sources in final energy consumption since 2007.

Share of renewable energy in gross final energy consumption



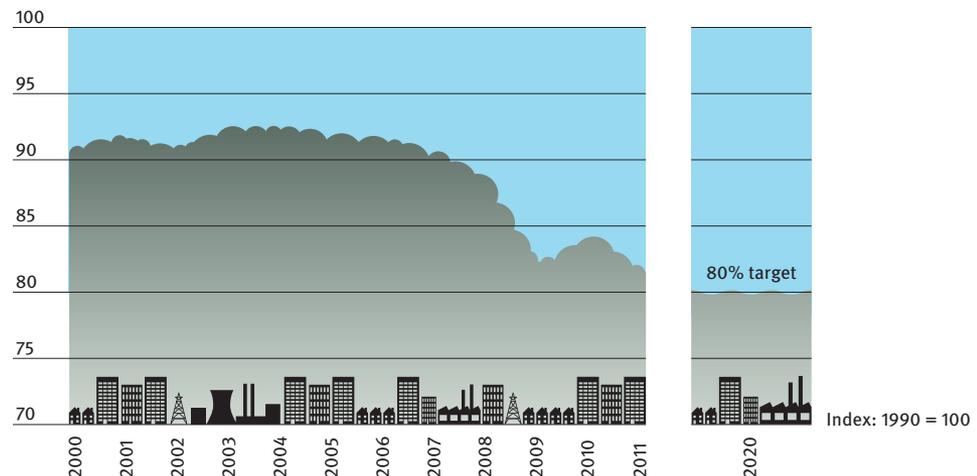
But it also had weaknesses and unintended consequences

The greenhouse gas emission target proved to be too low given the recession, but attempts to move to a more ambitious 30% target for 2020 were unsuccessful.

Over allocation of allowances has undermined the Emissions Trading Scheme (EU ETS).

The lack of a binding target for energy efficiency has made it a low priority, so the target is likely to be missed, despite the recession.

EU greenhouse gas emissions
2000-11



The unintended consequences of the Renewable Energy Directive

Rapid uptake of renewables based on consumer levies led to high consumer liabilities and political backlash in many member states.

Reductions in renewable support levels (degression levels) failed to keep up with technology cost reductions in many member states. Over generous subsidies led to large profits for renewable developers.

The 2020 target has not been followed by subsequent targets, failing to provide a long term confidence for the sector and a cliff edge in investment.

The popularity of many renewable electricity technologies has meant transport and heat have been given low priority by some member states:

- there has been a lack of attention to renewable heat, despite being typically lower cost than many electricity options;
 - there has been less effort to use waste heat as it doesn't count towards meeting the target;
 - there has been a move away from biofuels and slow adoption of electric vehicles.
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It contributed to the development of supply-focused energy policy with low investment in efficiency.

There has been a rush to low cost renewable electricity technologies (such as wood chips being burned in coal power stations) with questions over their wider sustainability.

What are the options
for 2030?

Greenhouse gas target

Renewable energy target

Energy efficiency target

EU ETS reform

Regulation

Harmonised energy markets

Infrastructure

R&D

Current member state positions on the 2030 package

What the UK wants

Greenhouse gas emission target only

Unilateral EU wide greenhouse gas emissions reduction target of 40% by 2030, without global agreement.

Moving up to 50% by 2030, conditional on a comprehensive global agreement on climate change in 2015.

No renewable energy target or mandatory energy efficiency target to deliver reductions in flexible, technology-neutral way.

EU ETS reform

Move to a 30% cap on greenhouse gas emissions by 2020.

Timely reform. The UK wants the European Commission to present legislative proposals for structural reform of the EU ETS before the end of 2013.

A single market for electricity and gas

Completion of the single market to integrate national energy markets and increase their efficiency.

Some member states agree with the UK's position

Poland



Thinks the EU should not tie itself into ambitious targets before it knows what the rest of the world is willing to commit to in 2015. It promotes strict technology neutrality.

Finland



Supports only one binding emissions reduction target and says that a renewable energy target should only be indicative or a moderate binding target. It wants the energy efficiency target to be indicative and thinks member states should set their own national targets.

Czech Republic



Joins the UK in supporting a single decarbonisation target with technology neutrality. Its priority is to stabilise carbon prices. It also wants more focus on the promotion of R&D.

Spain



Supports a greenhouse gas emissions reduction target of 40% by 2030. It has no official position on renewable energy and energy efficiency target.

Some member states want more targets

<p>Germany</p> 	<p>Has not come out with an official position but is thought to strongly favour a binding 2030 renewable energy target. It wants to produce at least 50% of its electricity from renewables by 2030.</p>
<p>France</p> 	<p>Supports a greenhouse gas emissions target of 40% reduction by 2030 and favours renewable and energy efficiency targets. However, France wants to back a renewable energy target at a later date based on a partial harmonisation of renewable support schemes and wants energy efficiency targets to be discussed, following evaluation in 2014 of the Energy Efficiency Directive (EED).</p>
<p>Denmark</p> 	<p>Its preliminary stance is to support a greenhouse gas emissions reduction target of 40%, a binding renewable energy target of 30% in 2030 and a binding energy efficiency target for 2030, following evaluation in 2014 of the EED.</p>
<p>Austria</p> 	<p>Supports a greenhouse gas emissions target but thinks it is insufficient. It supports a binding renewable energy and energy efficiency target. For the renewable energy target it wants to analyse whether it should be restricted to electricity and heat or include other sectors as well. It wants energy efficiency to be discussed following the 2014 evaluation of the EED.</p>
<p>Portugal</p> 	<p>Is in favour of a sectoral CO₂ reduction target. It is open to renewable energy targets as well, but thinks it is important to implement co-operation mechanisms, already foreseen in the Renewable Energy Directive, as interconnection is key. It prefers a binding target for energy savings instead of the mandatory measures, such as those currently set under EED.</p>
<p>Lithuania</p> 	<p>Supports all three targets for greenhouse gas emissions, renewable energy and energy efficiency. However, does not want mandatory targets for individual sectors (energy industry, transport, agriculture).</p>
<p>Estonia</p> 	<p>Is ready to support a single EU level greenhouse gas emission reduction target but also wants to set additional targets (renewable energy and energy efficiency) if they are proven to be cost effective measures for reducing greenhouse gas emissions and the targets complement each other.</p>

Some member states want no binding targets at all at EU level

Cyprus



Believes targets should be non-binding and relative to the financial capacity of each member state. Wants discussion on energy efficiency to be postponed until after 2014.

Romania



Wants member states to set their own renewable energy targets, with energy efficiency goals remaining aspirational. It wants the EU to embark on thorough decarbonisation only if other regions are also committed to strong greenhouse gas emission reductions.

What should the
greenhouse gas
target be?

Why we need a strong greenhouse gas reduction target

Sends a clear message to investors in low carbon (both development and deployment).

Maintains the EU's leading global position on climate change and helps to ensure EU lead in the global low carbon economy.

Puts the EU in a strong position to negotiate a global climate deal in 2015.

Provides a level playing field for businesses operating across Europe.

Aligns with other ambitions:

- within Europe: Germany and Denmark have set ambitious emission reduction goals to 2050.
 - outside Europe: China has signed up to a reduction in greenhouse gases of 40-45% by 2020 compared to 2005 levels. Brazil has set a target of 36-39% reduction by 2020, from 2000 levels.
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Two reasons given not to set a strong greenhouse gas reduction target

Unless international agreement is reached, the EU could be out of step with the rest of the world and it could reduce the EU's competitiveness globally in the next decade.

It is too early to set a target for 2030. It needs to reflect technological progress and costs, and international developments, to ensure action is on an equivalent level.

Views on the level of a greenhouse gas reduction target

What should the world be aiming for?

The 4th IPCC report suggests that, to stay within a 2°C limit, in 2050 global emissions must be reduced by up to 85%, compared to 2000.

What should the EU be aiming for?

The European Commission suggests an EU wide reduction of 40% by 2030 will put us on the most cost effective path to the target of 80-95% reduction by 2050 and will ensure effort is spread over time.

The UK government thinks we should aim for 50% across Europe with an international deal.

UK experts say that, if carbon offsets are accounted for, Europe's emissions are already nearly 27% below 1990 levels in 2012, which puts a 50% target for 2030 within reach.

What should the UK be aiming for?

The UK's Committee on Climate Change suggests that, to put us on track to the 80% reduction 2050 target (set under the UK's Climate Change Act), emissions should be cut by 55% by 2030.

Is a greenhouse gas target enough on its own?

Reasons why it could be:

It should lead to reductions at the lowest price across Europe, maximising flexibility.

It is simple.

There is widespread support for a greenhouse gas reduction target, achieved through carbon trading across business and industry.

Reasons why it is not:

It is unlikely to bring forward investment in longer term technology needed to meet long term 2050 targets.

It doesn't give industry sufficient visibility of the future market in each country to establish supply chains and reduce bottlenecks.

It's an expensive way to decarbonise the power sector, because:

- a very high carbon price would be needed to drive new technologies like carbon capture and storage (CCS);
 - a high carbon price paid by all leads to large windfalls for existing low carbon generation.
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Should there be
a renewable
energy target?

Pros and cons of a renewable energy target

Pros

Provides renewable industry with greater clarity, reducing cost of deployment and attracting international finance.

Renewables are seen as beneficial to many member states, bringing increased security of supply and jobs.

An EU wide target is easier to factor into the EU ETS than individual member states acting alone.

Renewables are likely to play a large role in most decarbonisation scenarios.

Cons

On its own doesn't lead to sufficient investment and development of non renewable technologies like CCS.

Governments may be reluctant to trade renewables. This can result in high cost renewables being overly deployed and renewables being put in suboptimal locations, which increases decarbonisation costs.

It is not straightforward as it is hard to predict the precise impact in advance.

It is hard to agree what the no or low regrets level would be ie greenhouse gas emission targets could be met with different levels of renewables.

Getting a renewables target right: problems and solutions

Problems

Could cause a rush to a limited set of cheap renewables or only those with low public opposition, such as solar and onshore wind.

Each member state could deploy technologies not well suited to their geography.

Solutions

Set 2030 minimum sub targets for new technologies, such as offshore wind and tidal.

Mandate that renewable trading is used in preference to high cost renewables. Set targets for regions, not individual member states, eg concentrated solar in southern Europe.

Would a sustainable energy target be more appropriate?

Instead of a renewable energy target, there could be a binding 2030 target for low carbon sustainable energy that covers renewable electricity, heat and transport and other forms of low carbon power.

It would enable member states to support CCS.

But, unless it is underpinned by minimum volumes for expensive new technologies, such as CCS, it is unlikely to drive investment on its own. Member states will favour low cost options like onshore wind. New technology would still need support to reach commercialisation.

It could face political backlash in several member states opposing nuclear, as it may lead to more investment in nuclear and less in renewables.

Should there be
an energy
efficiency target?

Pros and cons of an energy efficiency target

Pros

There are many potential cost effective efficiency measures which could be deployed: the 'no regret' option.

A binding target would lead to increased investment in energy efficiency, as it has done in the case of renewables.

It puts member states on the hook to ensure their energy efficiency policies deliver.

It creates interest for investors who can see a long term market for energy efficient goods and services.

Cons

It is hard to agree a meaningful, ambitious enough target.

Energy efficiency is hard to do in practice, as it involves lots of small interventions with multiple parties.

It is more costly for countries which have exploited some or all of the cost effective potential.

In the same way, the renewable energy target reduces flexibility as it reduces room for changes to national energy policy and possible fluctuations in national conditions.

It is difficult to factor into the EU ETS and could potentially weaken it.

Saving the ETS: Europe's flagship climate policy

Background on the EU ETS

Launched in 2005, the EU Emissions Trading Scheme (EU ETS) is the first and largest emissions trading system in the world.

It now covers more than 11,000 heavy energy using installations in power generation and manufacturing industry and around 45% of the EU's greenhouse gas emissions.

It puts a cap on overall emissions from installations which is reduced each year. Companies can buy and sell European Emissions Allowances (EUAs) within this cap.

Operators of installations must hold EUAs equal to, or more than, their total emissions at the end of the EU ETS year and those with excess allowances can bank or trade them with those who need to buy more allowances to comply with emissions limits.

The EU ETS is now in its third trading period:

- 1st: 2005-07
 - 2nd: 2008-12
 - 3rd: 2013-20
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Options to control the volume of allowances

Option	Strengths	Weaknesses
Move to 30% greenhouse gas emission reduction target for 2020. Cancel ETS allowances and/or reduce the cap more quickly.	It is simple and quick to implement.	As a one off intervention it wouldn't solve the long term structural problem that supply of permits can exceed demand.
Establish central carbon bank or other institution to control volume of permits or set triggers for review.	Independent intervention can be transparent and done on regular basis to increase investor confidence. Similar to national central banks setting interest rates.	Can be seen as too much intervention in market and not popular with Commission. Setting the correct volume is hard as it depends on several factors.

Options to control the volume of allowances

Option	Strengths	Weaknesses
Some member states retire excess allowances.	Shows political will from leaders for others to follow.	Would be hard to sell domestically as it reduces treasury revenues.
Limit or stop the carry over of allowances and/or limit use of international allowances.	Stops problem of over allocation going into subsequent phases.	Wouldn't deal with surplus before 2020. Requires changes to the EU ETS Directive.
Set tighter cap (total number of allowances) for 2030.	Make up for over allocation to 2030 by significantly increasing ambition beyond this date, which may also have an impact earlier.	Back-loads effort. Politically attractive now but could be vulnerable nearer time.

Or stabilise the price

Option

Set a reserve price.

Strengths

Has been done in other trading schemes (eg California).

Weaknesses

European Commission is unlikely to accept this, saying “no price level can be guaranteed in a free market.” It is hard to agree a minimum price and wouldn’t address the underlying volume problem of over supply, so could result in rock bottom prices. Might require modification of the EU ETS Directive which would be slow.

Would more
regulation
save money?

Why regulate at all?

Carbon price signals alone may not be enough to prevent lock-in to high carbon infrastructure.

To complement the EU ETS in the power sector and to drive the uptake of low carbon heating.

It reduces the need for public subsidy. It makes it possible to ban high carbon technology rather than just giving low carbon technology financial incentives.

Set in advance it enables industry to adapt and innovate.

Why regulate power stations at an EU level?

Regulation would be more reliable and lower cost than reducing emissions through the carbon price alone.

It could introduce an EU wide Emissions Performance Standard (EPS) that reduced over time.

The EPS would set an emissions ceiling, and the ETS would encourage the lowest carbon options beneath that ceiling.

This could be done on plant, fleet or sector wide basis.

An EU wide EPS has to be set at right level:

- Fleet or sector wide (ie a power sector decarbonisation target) it might be more flexible as it would allow some fossil plant to run more than others.
 - If it is done as a sector average it would need trading between generators and could overlap with the ETS.
 - A fleet or sector wide EPS could also hide poor performance, making average emissions from coal and nuclear plants look clean. It may be preferable to have a plant level EPS instead to rule out the worse offenders.
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Including
infrastructure,
harmonised energy
markets and R&D

Strengthening the 2030 package

Better regulation of infrastructure: Currently electricity networks are regulated on an individual member state level. More pan-European regulation is needed so more investment is made on a pan-European basis.

A common electricity market fit for purpose and, potentially, a move away from energy only markets.

More R&D around common problems, eg hard to treat buildings, industrial processes and improving electric vehicle batteries.

Elements of the package must
be compatible

All or some?

It is possible to have all of the components of the package or to pick and choose a combination of targets and other measures, for instance only an energy efficiency target and greenhouse gas emission target.

A renewables target would need an energy efficiency target to ensure a good balance between investment in renewables and efficiency.



Some combinations reinforce each other

A strong carbon price ensures the polluter pays and reduces the need for subsidy to meet a renewables target.

Greater energy efficiency reduces the amount of renewable energy needed.



Some elements could undermine each other

The impact of any renewable energy and energy efficiency targets need to be properly factored into the EU ETS cap, as does a European wide EPS. However, this would be easier with an EU wide approach than if some countries adopt targets or regulations and others don't.



Three vital elements for 2030 climate and energy policy

1. Set out the direction of travel.

The EU needs to continue leading action on climate change and quickly adopt a 50% reduction greenhouse gas emission target for 2030.

2. Use clever regulation to drive down costs.

Include regulation of both power (with a power sector decarbonisation target and/or plant by plant regulation) and heat. Regulation is a cost effective way of driving the uptake of low carbon technology, reducing the need for government subsidy and avoiding high carbon infrastructure lock-in.

3. Ensure necessary infrastructure is in place.

The package needs to deliver the cross border infrastructure needed through better pan-European regulation.

References

by slide number

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- 22 Renewables are likely to play a large role in most decarbonisation scenarios: In the UK for example, the central delivery plan under EMR (which results in an electricity sector with 100gCO₂/kWh compatible with the government's carbon plan) has more than 50% renewable electricity, despite a ramp-up in nuclear and successful demonstration of CCS. DECC, 2013, EMR delivery plan consultation, www.gov.uk/government/uploads/system/uploads/attachment_data/file/238867/Consultation_on_the_draft_Delivery_Plan_amended_.pdf
The European Climate Foundation's *Power sector perspectives 2030* proposes a European power sector with 50% renewables by 2030, www.roadmap2050.eu/attachments/files/PowerPerspectives2030_FullReport.pdf
The optimised pathways in a report by the gas industry have 37-39% of power from renewables in 2030. European Gas
Advocacy Forum, 2011, *Making the green journey work, optimised pathways to reach 2050 abatement targets with lower costs and improved feasibility*, www.centrica.com/files/pdf/making_the_green_journey_work.pdf
- 24 A sustainable energy would cover renewable electricity, heat and transport but also other forms of low carbon power: In addition to energy that qualifies under the Renewable Energy Directive (wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases, plus renewable electricity used in electric vehicles), each MWh from nuclear power stations and each MWh from a carbon capture and storage plant that was capturing a certain proportion of CO₂ from its flues would also count towards the target.
- 31 Modifications to the EU ETS Directive are slow: though it could perhaps be done through modifying auction regulations
- 39 A strong carbon price ensures the polluter pays and reduces the burden on subsidy required to meet renewables target: For example the new feed-in tariff with Contract for Difference (CFD) in the UK will top up the price that low carbon generators get in the wholesale market to a reference price. A high carbon price should increase the wholesale price and therefore reduce the payments the government makes to low carbon generators.

Getting EU climate and energy policy on track

This work is part of Green Alliance's Low Carbon Energy theme



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