Moving from 20 to 30% emissions reduction by 2020?

Reaching the 80% 2050 emissions reduction target while securing the benefits of transitioning towards a low carbon economy

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DRAFT FOR COMMENTS

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Reaching the 80% emissions reduction target while securing the benefits of transitioning towards a low carbon economy

This interim report builds upon the inputs from all the contributors to the project:

The Center for International Research on Environment and Development (CIRED), on the time consistency of the EU emissions reduction pathway, and the competitiveness and leakage impact of moving to 30% by 2020

E3G, on the global race towards low carbon technology competitiveness

ECN, on the low carbon technology innovation and diffusion implications of moving to 30%

ECOFYS, on the consistency of the EU emissions reduction, renewable energy and energy efficiency targets, and on the energy security impacts of moving to 30%

The International Consulting on Energy (ICE) on the employment impact of climate policies

IDDRI on the investment dynamics in the electricity sector

The Finish institute of International Affairs (FIIA) on the energy security impacts of moving to 30% for Poland, Czech Republic and Latvia, and on the use of the EU budget to support the transition towards a low carbon economy in Central and Eastern European (CEE) countries

Some of these contributions will be published as separate papers.

They will be available at http://www.climatestrategies.org/research/our-reports/category/57.html

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Disclaimer

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The Institute for Sustainable Development and International Relations (IDDRI) is a European think tank based in Paris (France) and Brussels (Belgium). Its mission is to bridge the gap between research and decision-making and investigate international policy issues on sustainable development and global governance. IDDRI focuses its activities on four major themes: climate change, biodiversity, global governance and urban fabric. It also seeks to facilitate discussions between the various stakeholders involved in global issues related to sustainable development.

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Key messages:

Framing the European Union (EU) greenhouse gas emissions reduction debate in terms of a **2020 target** is important both for climate and economic reasons. However it **obscures** two important goals:

i. Ensuring that the EU reaches its 80-95% emissions reduction target at **least cost**
ii. Ensuring that the EU **captures the benefits** of the transition towards a low carbon economy.

These two points make it **crucial to look beyond emission reduction targets**, and to consider first and foremost the **structural and sectoral policies** that are needed.

The current Climate and Energy Package (CEP) level of ambition and the content of its policies create **high risks** that the 80 - 95% 2050 emission reduction target **cannot be reached** at reasonable costs.

There are two main factors that explain why **moving beyond 20%** can reduce the costs:

i. High-carbon infrastructure lock-in and the investment cycles of these investments;

ii. Low-carbon technology innovation and diffusion and the carbon price signal needed to trigger these investments.

Therefore the **EU needs to tackle inertia**, by implementing **timely and adequate policies**, beyond simple carbon pricing, in sectors driving energy demand, in particular in the **transport and building sectors**. It also needs to **shape carbon price expectations** of investors, by tightening the Emissions Trading Scheme (ETS) cap in 2020, and setting a 2030 ETS target. Both targets need to be consistent with a near total decarbonisation of the electricity sector by 2050.

If the EU does not implement such policies, the **costs of reaching the 2050 target** will be **higher**. Based on our modelling exercise, the **GDP growth differential** between the 20 and 30% scenario is close to 1% per year during the 2040 – 2050 decade. The EU will also lose market share in low carbon technologies. Indeed some countries, including China and South Korea are investing heavily and rapidly on renewable energy technologies and on electric vehicles. Therefore if the EU does not increase the growth rate of its renewable energy investments and capacities installed, **China will overtake the EU** before 2020.

Moving beyond 20% could also yield some additional benefits. Some of these are straightforward, such as **increased energy security**, measured in terms of lower energy bills, higher energy mix diversification, or lower energy dependency in some sectors such as transport. Some of the benefits are policy dependent, such as **job creation**. Given the labour intensity of building refurbishment, public transport

construction, and development of the renewable energy sectors, focusing additional effort on these sectors has the potential to create a significant number of jobs.

0. Introduction: framing the issue correctly

The EU will soon have to take a very important decision: whether or not it wants to move beyond its current 20% greenhouse gases (GHG) emissions reduction target by 2020. Framing the issue along these lines is meaningful. 2020 emissions reduction targets indeed make sense for two reasons:

- **Climatically**, because global emissions have to peak between 2020 and 2025 if we want to have a reasonable chance to limit the global temperature increase to less than 2°C compared to pre-industrial levels[1].
- **Economically,** because emission reduction targets send a clear signal to invest in the low carbon economy[2].

Nevertheless, framing the issue in such a way is also deceptive. It hides some motivations and implications of this decision that go way beyond the level of effort of EU emissions reduction in 2020:

- **Beyond 2020: reaching the EU 2050 target**

The scientific view suggests that, in order to limit the temperature increase to less than 2°C developed countries as a group must reduce their emissions by 80-95% by 2050. The EU has recognized this scientific view and turned it into a political commitment[3]. The question then becomes: how do we ensure the time consistency of the 2020 and 2050 emissions reduction targets? Emissions reduction targets are not the only parameter to consider when determining how the EU can reach its 2050 target at least cost. Therefore, the question is: will the current climate and energy package (CEP) leave the best available legacy – in terms of infrastructures installed and investment dynamics – in 2020 to reach the 2050 target at least cost?

- **Beyond climate: positioning the EU within the new world economy**

Climate and energy challenges draw the outlines of a new world economy. There are no prospects for high-carbon growth in the future. Around the globe, some countries, including China, are investing rapidly and massively in low carbon technologies. There is an ongoing debate to determine whether or not the Chinese 40 – 45 % reduction of carbon intensity commitment represents a significant deviation from its Business As Usual (BAU) scenario. But beyond the issue of actual the level of effort, China – as well as other emerging countries, including South Korea – positions itself as a major producer and exporter of low carbon technologies. The question then turns into: how do we ensure that the EU captures the benefits of transitioning towards a low carbon economy? Here too, emissions reduction targets are only part of the portfolio of instruments to implement to ensure that the EU captures the growth, employment, technology and energy security benefits of

[1] IPCC 4th assessment report
[2] Climate Strategy, Carbon prices and investment responses
[3] EU Council decision 2009

climate policies. The question is: are the policies included in the current CEP designed to harness the maximum of these potentials?

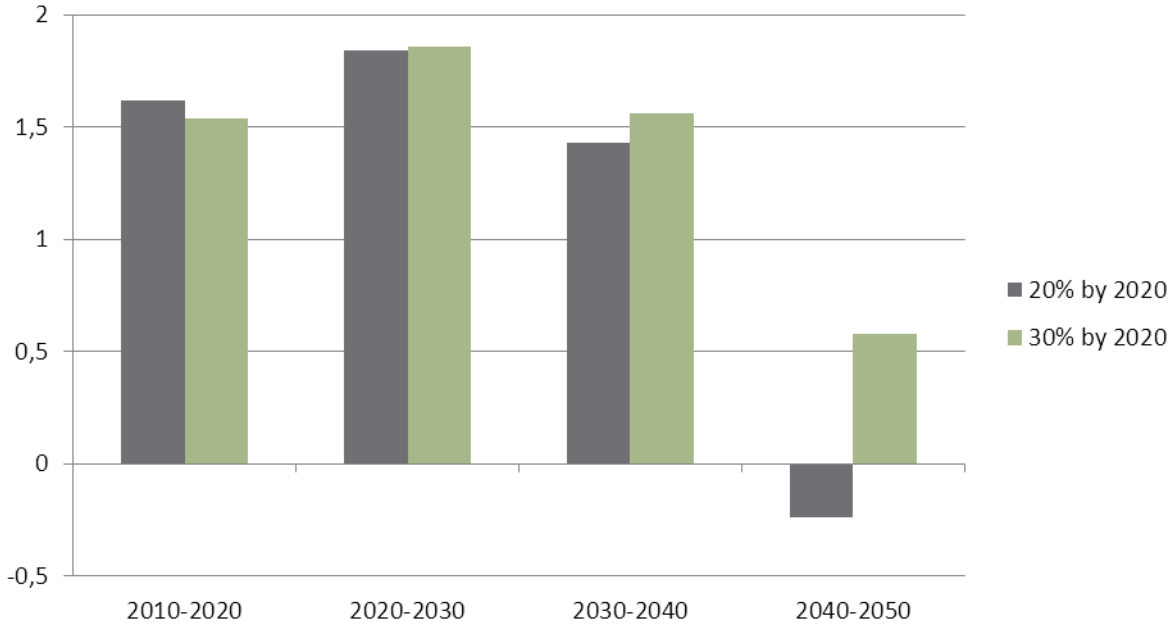
Our analysis considers these two dimensions.

1. Ensuring the time consistency of the 2020 and 2050 targets:

A. Balancing short and long term costs and gains:

The current CEP is too weak and induces significant risks that the EU 2050 target cannot be reached at acceptable costs.

GDP mean annual growth rate



Source: CIRED

Using the IMACLIM-R model developed by the CIRED, we have compared the impacts on GDP growth of the two options currently considered by the EU: the status quo (20% emission reduction by 2020, grey), and a higher target (30% emission reduction by 2020, green)[4]. Our analysis suggests that, compared to the current situation, moving beyond 30% by 2020 creates high long-term economic gains and only small short-term costs. These costs are essentially a by-product of the modelling exercise and can be reduced through smart policy design.

There are two main reasons why the weaknesses of the current CEP induce significant risks that the EU 2050 target cannot be reached at acceptable costs:

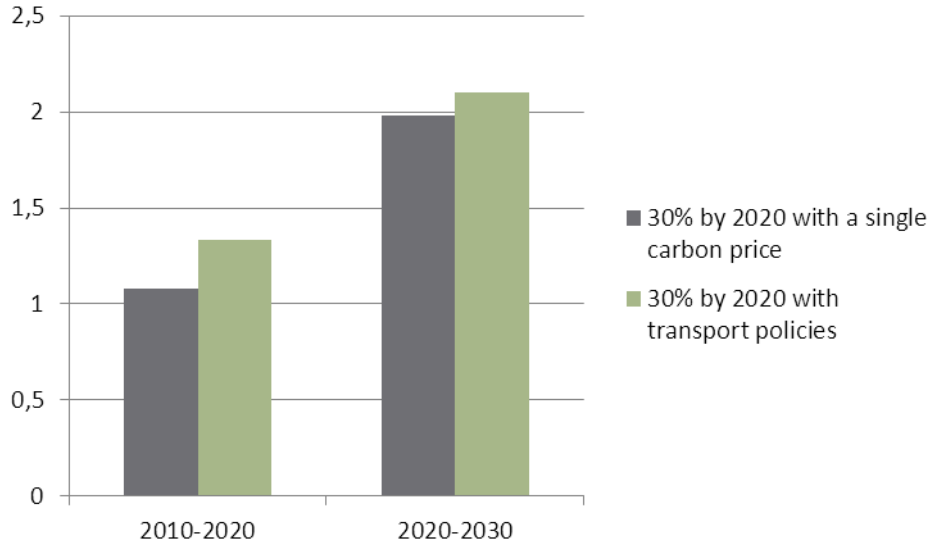
- The need to tackle the inertia of some sectors and the risks of high-carbon infrastructure lock in
- The need to shape expectations for low-carbon technologies and the risks of deploying these technologies too little too late.

[4] Our 30% emission reduction target in total corresponds to a -25% domestic emission reduction, as in the 2050 roadmap by the European Commission.

B. Tackling inertia:

Taking into account the economic recession and current energy efficiency policies (since the adoption of the 2006 EEAP), meeting the 20% energy efficiency target by 2020 will require a three-fold increase in policy impact. Pro-active investment policies – beyond simple carbon pricing – need to be implemented in the building and transport sector to reach the energy efficiency target. Early and aggressive actions in these sectors significantly lower the costs of reaching the 2050 emissions target. This does not always require an increase in the absolute level of investments. In the transport sector, investments need to be re-directed towards low-carbon transportation modes.

GDP Mean annual growth rate



Source: CIRED

In order to show that structural and sectoral policies are even more important than the emission reduction target itself, we have compared the impacts on GDP growth of two different ways of reaching the 30% target: in the first case (grey) the 30% target is reached with a carbon price only; in the second (green), the transformation of the transport sector does not only result from the carbon price, but is also induced by pro-active investment policies. Our analysis suggests that the short term GDP growth is higher in the scenario with proactive transport policies than in the scenario with a single carbon price. This comparison is only an illustration of a more general trend based on the example of the transport sector: the positive impact on GDP growth of investing early on infrastructure change, instead of relying on a single carbon price.

Not all sectors of the economy react in the same way to a carbon price. The buildings and transport sectors in particular are quite inert sectors, as opposed to the electricity sector, which is more reactive to carbon prices. In the buildings sector, a number of market failures and investment obstacles exist that explain why a carbon price alone cannot reduce emissions and why negative cost energy efficiency policies

and measures are difficult to implement. In the transport sector, public sector investments shape the transport infrastructure network, and the price of oil is only one among many parameters considered when looking to invest.

That was part of the rationale to divide the EU emissions reduction effort between ETS (electricity and high-carbon industries: aluminium, cement and steel) and non-ETS (others) sectors. There are links in between the ETS and non-ETS sectors. Indeed, the Renewable Energy Sources (RES) target significantly affects the residential (heat) and transport (vehicles) sectors – both of which are in the non-ETS sector. Similarly, the energy efficiency target (and associated policies) also affects the use of electricity and hence the EU ETS. Nevertheless, the EU approach towards these two broad categories of sectors is widely different:

- **For ETS sectors**, the EU-ETS binding target (21% emissions reductions in 2020 compared to 2005 levels) directly induces a carbon price, shaping electric utilities' and industries' operation and investment decisions. The RES binding target (20% of final energy consumed through RES in 2020) complements the ETS for the electricity sector and is partially driven by other industrial objectives rather than purely climate, emissions reduction, objectives.
- **For non-ETS sectors**, the EU has only set a non-binding energy efficiency target (20% deviation from BAU in 2020). EU legal provisions then provide a wide range of approaches, ranging from very flexible Directives (Energy Service Directive, Energy Performance of Buildings Directive) to Regulations that are entirely and directly applied in national legislation in all Member States (MS) (Eco Design Directive, Labelling Directive). But levers for actions to actually reduce the overall level of energy demand mainly lie in the hands of Member States.

The conventional argument for implementing energy efficiency policies is that some energy efficiency actions have negative costs, with the long run savings outweighing the short-term investment costs. Although these investments make financial sense, they may not be undertaken due to consumers being capitally constrained or averse to debt. The recent economic and financial crisis has made this issue worse. Our analysis presents another argument for implementing specific energy efficiency policies.

Energy efficiency is a generic term that can be applied to a wide range of domains, ranging from products to the infrastructures driving energy demand. Improved energy efficiency for products represents a significant mitigation potential. The EU is making good progress to increase the energy efficiency of products, thanks to the EU internal market, even if significant room for further improvement exists. But infrastructure in the industry, building and transport sectors in particular, also have a key impact on the level of final energy demand. EU action in these sectors is not as strong as actions to increase the energy efficiency of products. However early and aggressive actions in these sectors have the potential to lower the macro-economic costs of reaching the 2050 target. In the transport sector in particular, investments need to be re-directed towards low-carbon transportation modes.

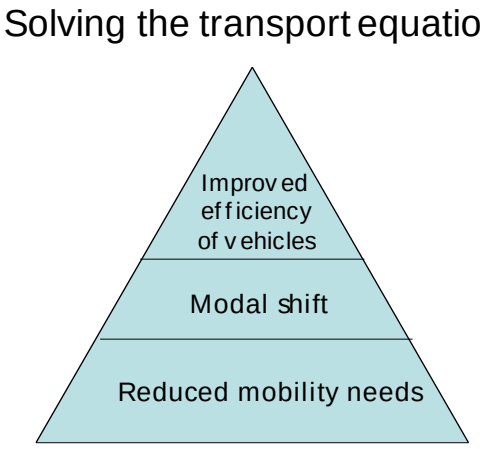
Building and transport sectors: What are the issues? What could be the EU policies?

i. In the building sector, the issue is the improvement of the energy efficiency of existing buildings. The level of energy efficiency of new buildings is a key issue in other regions of the world, in particular in big emerging countries. However in the EU, given the expected growth of the building stock in the future, and taking into account the level of performance of current technologies and the level of stringency of current EU legislations (energy service directive, energy performance of building directive…), the issue of the energy efficiency of new buildings is more or less under control.

On the other hand, the issue of the energy efficiency of existing buildings is poorly handled. Many parameters explain why it is more difficult to progressively improve the energy efficiency of existing buildings up to the desired level than to set the level of energy efficiency of new buildings at the appropriate level in the first place. Old infrastructure makes it more difficult to install more energy efficient technologies. These new technologies can only be installed when there is an overall programme of refurbishment and retrofitting of buildings otherwise the cost is prohibitive. Some ways in which the EU can play an active role to further improve the energy efficiency of existing buildings include:

- Technology specific or efficiency norms and standards (to improve the energy efficiency of products, or the overall energy consumption of buildings)
- Financing instruments (to provide the up front costs of investments)
- Public procurement schemes (to foster the development of new technologies)

ii. In the transport sector, there are three elements that need to be combined to reduce the – still rising – emissions from the sector:



- The EU can encourage the improved efficiency of vehicles and foster their electrification by setting norms and standards, but also by providing RD&D funds to automobile makers.

- The modal shift of the transport sector encompasses two different dimensions: the shift from private vehicle to public transport and walking and cycling for short distances; and the shift from road and air to rail for longer distances. The first shift (short distances) is embedded in urban policies. Even if this is by definition a national and sub national issue, the EU is not powerless to incentivise cities to reduce their emissions in general, and to fasten the modal shift in particular. It could for example make greater use of the EU budget, the European Investment Bank (EIB) and the carbon markets. On the other hand, the second shift (longer distances) is European by nature. Large-scale investment projects are crucially needed to better connect big EU cities by high-speed rail, both for passengers and freight transportation. Such EU large-scale investment projects are under consideration or implementation for the electricity sector, both for electricity supply (Desertec…) and for network infrastructures (Nabuco…), but not at the same scale for the transport sector.

- The reduction of mobility is much more difficult to achieve than the improved efficiency and electrification of vehicles and the modal shift. But the issue must be raised, since the reduction of mobility needs would help reaching the required level of emissions reduction by the transport sector, without putting too much pressure of the electricity sector. The reduction of mobility does not necessarily mean a reduction of welfare. It can come as a result of reduced mobility needs. Solutions exist, both for passengers (e.g. shortening of the home-work distance through urban policies, increased use of video conferencing…) and freight (shortening of the distribution system through a reorganisation of the value chain) transportation, but these obviously take time to be implemented.

C. Shaping expectations:

Strong and long-term carbon price and other climate policy signals are necessary to deliver low carbon investments at scale and reach the long-term target. The current CEP in general, and the ETS target in particular, does not create enough scarcity in the short-term, nor does it produce enough predictability and credibility over the long-term to reach the 2050 objective. Eventually, these two aspects are linked.

i. The need for a stronger short-term signal:

A ten-year time frame is very short for companies covered by the ETS. Within the next ten years, affordable abatement options are limited for these companies. They are limited both by the long time needed to invest in new capacities and by the high costs of some technologies needed to improve existing capacities. Nevertheless, some low cost options exist and include: increased energy efficiency by industries but also, and much more importantly, the fuel switch and the new investment decisions by electricity utilities.

Investment decisions in the electricity sector are currently driven by three main trends: investments to replace existing capacity, in Western and Eastern Europe alike; investments to satisfy an increase in energy demand, mainly in Eastern Europe; and investments in gas-fired power plants to benefit from the liberalisation of the European electricity market.

To replace existing production capacity whose lifespan cannot be prolonged, and to invest in new capacity to deal with increased energy demand, different low-carbon or even zero-carbon electricity production options already exist or are seriously envisaged in the near future: renewable energies, nuclear, coal with Carbon Capture and Storage (CCS) and to a certain extent – at least compared with coal – gas. The effects of a tighter ETS cap by 2020 only on these technologies need to be looked at separately, but also together, taking into account their complementarity within the electricity mix.

- The switch from coal to gas is only a short-term fix for reducing the carbon emissions attributable to the electricity sector. Given the cost profile of gas operating electric utilities, CCS makes much less economic sense for gas than it makes for coal. A massive switch from coal to gas would therefore help towards achieving the 2020 emission reduction objective of the electricity sector, but it would hinder the EU ability to reach its 2050 emissions reduction targets. Therefore, switching from coal to gas should not be seen as a silver bullet. However gas can be an attractive solution to reduce emissions in the short-term, and can play an important role in the future as we expand renewables.

- Given the extent to which renewables are supported by other means (the renewable energy target in particular), a tighter ETS cap by 2020 only would do little to further expand renewables.

- Finally, the delivery timetable for nuclear and coal CCS also means that a tighter ETS cap by 2020 would do have only a little impact, instead the long-term carbon price is much more important to trigger further investments in these two technologies.

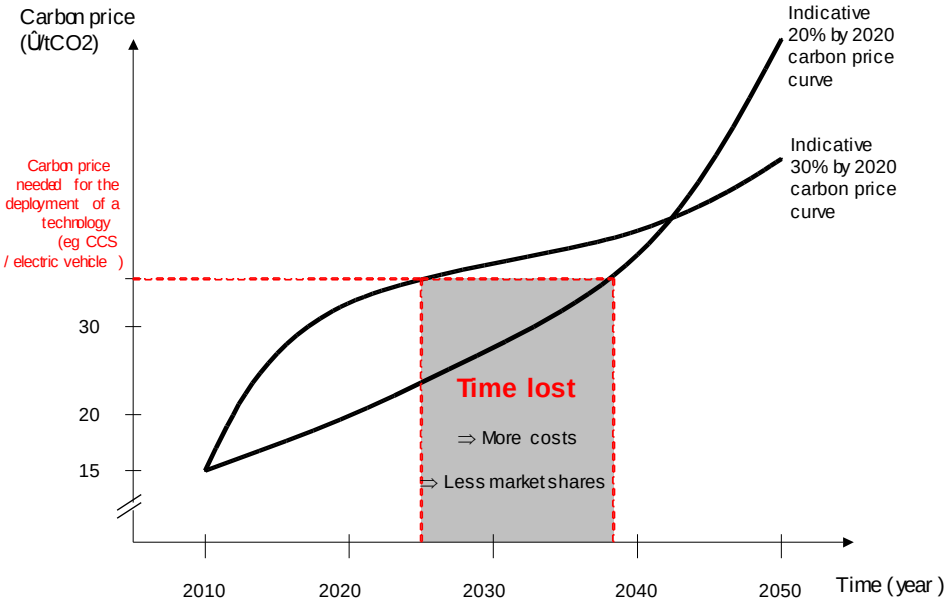
There is therefore only a small room for manoeuvre to increase the level of emissions reduction at low costs under the ETS by 2020. These are likely to be achieved through improved energy efficiency in industries, and further deployment of gas and wind. But, beyond emissions reduction by 2020, the 2010 – 2020 decade is key, because significant investment decisions will be made for the 2020 – 2030 decade. As soon as today, economic agents need to expect a strong and steadily rising carbon price in the future and include it into their investment decisions.

Therefore, what is important in the short-term is the extent to which the 2020 price signal relates to the 2050 emissions reduction target. Prospects and expectations of a high future carbon price, even with ambitious legislated long-term targets, will not be credible in the context of current low carbon prices.

The economic crisis induced a reduction of the production level of electric utilities and industries covered by the ETS, which in turn induced an allocation of allowances that have not been used during the phase II of the ETS. The – current and forecasted – low carbon prices raise the legitimate issue of setting aside a fixed quantity of allowances to prevent the carbon market from being simply broken. Our analysis does not address quantitatively this particular aspect of the issue but establishes why and how this needs to be complemented by other actions under the ETS – setting a 2030 target for example – to be both meaningful and efficient.

ii. The need for a longer-term signal:

The ETS induces a carbon price signal after 2020. It has already been agreed that the ETS cap would be reduced by 1.74 % per year after 2020. Nevertheless, it will not lead to the level of reductions necessary in 2030, in particular for the power sector. It is therefore urgent to provide clarity on the EU ETS out to 2030, and to set ambitious caps to create sufficient scarcity and a robust price signal in line with the longer lifetime of assets, consistent with the 2050 emission reduction target, and the need to almost fully decarbonise the power sector in particular.



Source: IDDRI[5]

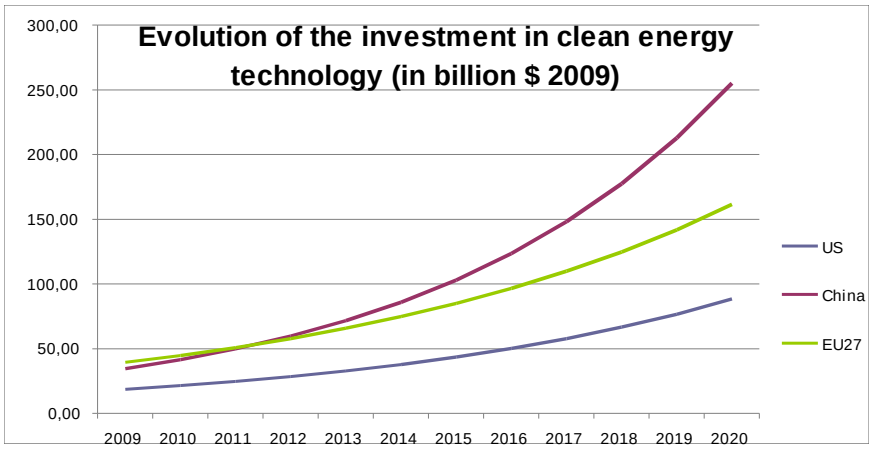
Without a stronger and longer-term carbon price signal, and without additional innovation policies, the diffusion of low carbon infrastructure and technologies across the economy will be slow and inadequate. Thus in areas such as CCS and electric cars there will be insufficient private sector investment in these technologies. This could risk the EU failing to procure a first mover advantage in the low carbon technology race and replacing its import dependency on fossil fuels with an import dependency on low carbon technologies. There may also be a lack of global investment in these technologies, resulting in much higher global costs of avoiding dangerous climate change.

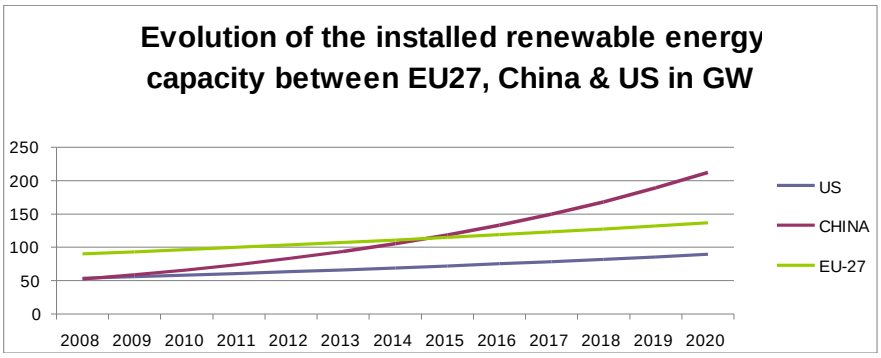
[5] This graph is purely indicative. One should not pay attention to the absolute numbers (time or price) but only to the mechanisms illustrated

2. The position of the EU within the new world economy

A. Investing in the low carbon economy

Low carbon technology innovation is a global public good: when a country or a company invests into low carbon technology innovation, it lowers the costs of adopting these technologies for the others. But low carbon technology innovation is also a global competition: selling these technologies confers to the producer a private benefit.





Source: IDDRI calculations based on IEA data

The EU has long been leading the global race for low carbon technologies, and renewable energies in particular. But EU leadership is at risk. China is already virtually the world leader for renewable energy investments. And if the same past five-year growth rates of the EU and China respectively continue in the future, China will become the world leader for renewable energy capacity installed as soon as 2014.

i. Focus on renewable energies

Emissions reduction, renewable energy and energy efficiency targets are key drivers for low carbon innovation. A move beyond 20% along with stronger EU low-carbon technology push policies will enable the EU to secure a larger share of the global low carbon industries and thus enable higher benefits of transitioning towards a low carbon economy.

The share of renewable energy in gross final energy consumption increased from 10.4% in 2008 to 11.6% in 2009. Over half of this increase cannot be attributed to a rise of the numerator but is due to a fall of the denominator. The economic crisis indeed resulted in a massive reduction of energy consumption: 66.3 Mtoe. This contraction of energy demand mechanically pushed up the share of renewable energy. But assuming a constant level of gross energy consumption in between 2008 and 2009, the share of renewable energy would be "only" 10.9%. Reducing energy demand help reaching the renewable energy target, since it lowers the need for renewable energy capacities installed. But now that the EU is, slowly, recovering from the economic crisis reduced energy demand must come from an increased impact of energy efficiency policies.

The economic crisis did not only induce a contraction of energy demand. It also has long lasting effects on private and public access to finance and capital costs. They will very likely put a downward pressure on the investment signals for renewable and low carbon energies. Private access to finance remains difficult and capital costs high for renewable energy developers, and the financial industry increased its risk aversion after the crisis. Governments are trying to reduce their public deficits, by increasing fiscal revenues, but also mainly by reducing public spending. Renewable electricity support schemes and renewable technologies direct aids are under the spotlight.

Indeed, in a number of Member States, there are massive cuts of spending on renewable energies (Netherlands, Spain, France…). Governments argue that these support schemes and direct aids are expensive. But their costs need to be balanced with their economic and environmental benefits. While there is no question on their environmental benefits, their economic benefits are indeed sometimes debatable. However this is mainly due to a lack of balance in between push and pull policies.

Push policies directly support renewable technology supply. Pull policies support renewable electricity by creating demand. The balance in between push and pull policies in widely different among MS. But a number of countries have relied too heavily on feed-in tariffs to support renewable electricity, without effectively supporting the creation of a renewable industry. This lack of balance induces trade deficits in a number of countries. For example in France, the imports of solar panels represent 2% of the total trade deficit.

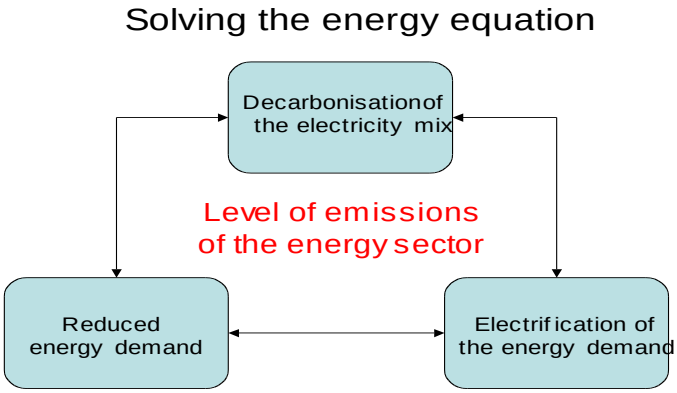
Reaching the 20% RES target in 2020 is a key turning point on the way to the almost full decarbonisation of the electricity system by 2050. The economic crisis and cuts in public spending induce a significant risk that the target will not be met. In addition to

feed-in tariffs, stronger support for the EU renewables industry is needed. A better balancing of push and pull policies can indeed: provide an additional justification for public spending in times of scarce public resources; procure a first mover advantage to the EU in the low carbon technology race, in times of fierce international competition.

B. Increasing energy security

Moving to a higher emissions reduction target by 2020 can increase EU energy security in several ways. Depending on price of oil forecasts, moving to 30% by 2020 can reduce the price of the fossil fuel energy bill by 58.2 – 70.2 billions of euros[6].

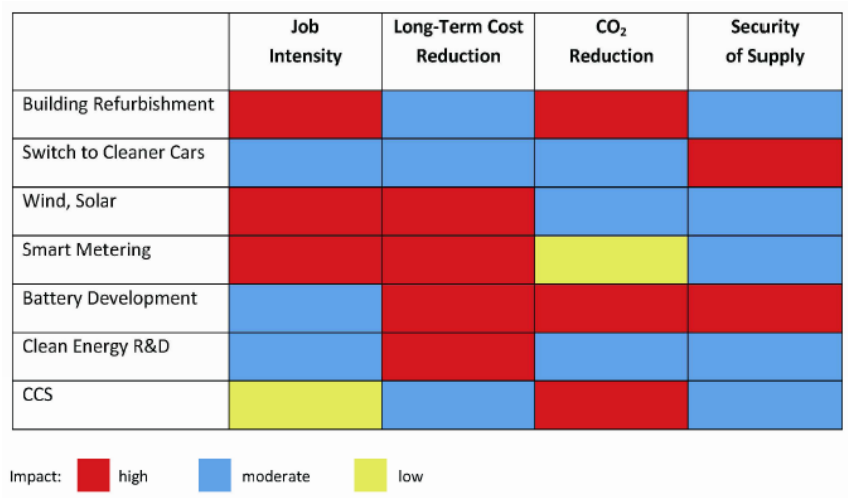
But the precise energy security implications of moving to 30% are closely linked with the policies implemented to reach the target. A move to 30% focusing only on the short-term emissions reduction of the electricity sector can lead to a shift from coal to gas and increase gas import dependency concerns. But a move to 30% also aims at reducing the energy demand of the building and transport sectors can prepare for the electrification of these sectors (electric heating and electric vehicles) without putting a downward pressure on the carbon price signal under the ETS.



C. Creating jobs

Some sectors in which further early action is needed are relatively labour intensive: reducing energy demand in the building and transport sectors, and deploying renewable technologies to reach the 20% renewable energy target. A move to 30% focusing on these sectors therefore has the potential to create jobs. But these actions are technology specific. Good knowledge by workers on how to use these technologies is therefore necessary for these actions to be actually implemented. These qualifications are not always available at scale within the EU and in particular MS. Coordinated EU and MS labour policies are therefore needed to create these competencies.

[6] ECOFYS


Job Intensity
Long-Term Cost Reduction
CO_2 Reduction
Security of Supply
Building Refurbishment
Switch to Cleaner Cars
Wind, Solar
Smart Metering
Battery Development
Clean Energy R&D
CCS
Impact:
high
moderate
low

Source: IEA

Conclusion:

Framing the debate in terms of 2020 emissions reduction is important, for climatic as well as economic reasons. But it hides two dimensions: ensuring that the EU reaches its 80 - 95% 2050 emission reduction target at least cost, and that the EU captures the benefits of the transition towards a low carbon economy. These two points make it crucial to look beyond emission reduction targets, and to consider first and foremost the structural and sectoral policies that are needed.

The level of ambition of the current Climate and Energy Package (CEP) and the content of its policies create high risks that the 80- 95% 2050 emission reduction target cannot be reached at reasonable costs.

Two main factors explain why moving beyond 20% can reduce the costs: high-carbon infrastructure lock-in and the investment cycles of these investments; low-carbon technology innovation and diffusion and the carbon price signal needed to trigger these investments.

The EU therefore needs to tackle inertia, by implementing early and aggressive policies, beyond simple carbon pricing, in sectors driving energy demand, in particular in the transport and building sectors. It also needs to shape carbon price expectations of investors, by tightening the ETS cap in 2020, and setting a 2030 ETS target. Both targets need to be consistent with the need to almost fully decarbonise the electricity sector by 2050.

If the EU does not do so, the costs of reaching the 2050 target will be higher. But the EU will also lose market shares in low carbon technologies. Indeed some countries, including China and South Korea are investing massively and rapidly in renewable energy technologies and in electric vehicles. If the EU does not increase the growth rate of its renewable energy investments and capacities installed, China will overtake the EU before 2020.

Moving beyond 20% could also yield additional benefits. Some of them are straightforward, such as an increase energy security, measured in terms of lower energy bill, higher energy mix diversification, or lower energy dependency of some sectors, such as the transport sector. Depending on price of oil forecasts, moving to 30% by 2020 can reduce the price of the fossil fuel energy bill by 58.2 – 70.2 billions of euros.

Some of them are policy dependent, such as job creation. Given the labour intensity of the building refurbishment, public transport construction, and renewable energy sectors, focusing the additional effort on these sectors has the potential to create a significant number of jobs.

Further work:

This document is a draft interim report. The final report will be available before the end of May 2011. Meanwhile, the research and consultation with stakeholders continues. Additional research will in particular address the following issues:

- What are other countries and companies precisely doing to reduce their emissions, control their energy demand, produce and adopt low carbon technologies?
- What are the concrete policies that can be implemented to further reduce energy demand in the buildings and transport sectors and how can national and sub-national policies be combined with, and facilitated by, EU policies?
- What are the specific actions needed under the ETS by 2020 and 2030 to make sure that the EU 2050 objective is achievable while addressing competitiveness and leakage concerns?
- How can we make use of the EU budget to facilitate the transition towards a low carbon economy in Central and Eastern European countries?

The purpose of circulating this draft interim report is to gather comments in order to improve the quality of the final report. Comments should be addressed to:

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