Where is all that green investment?

Introduction

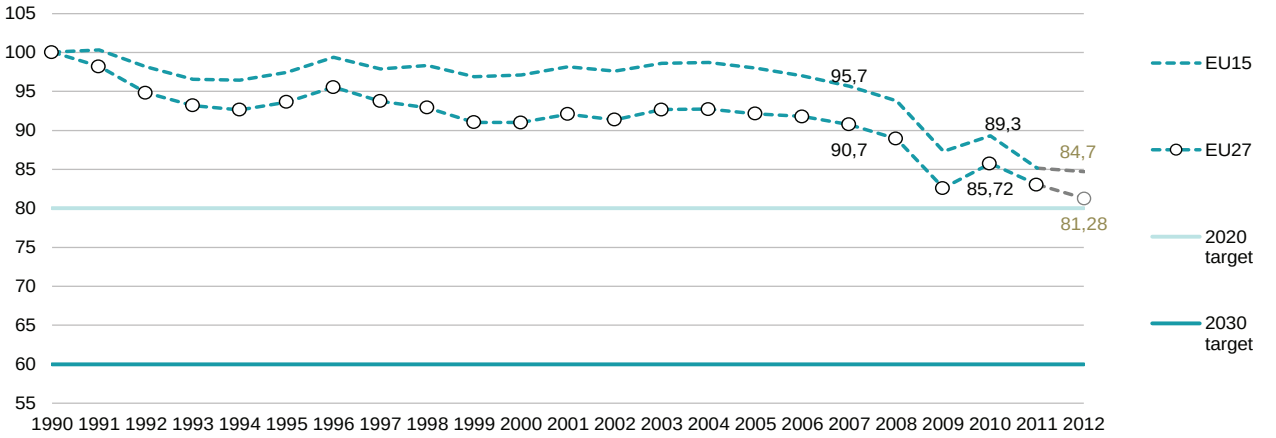
There is an emerging consensus in Europe (European Commission 2012; Kolev et al. 2012; OFCE et al. 2013) that, in the absence of a powerful kick to revive its anaemic efforts at investment both public and private, the European economy is not going to make the turnaround for sustainable growth. The commitments undertaken by the EU 2020 Strategy and by the related Commission documents on sustainable development – such as the Energy Roadmap 2050 (European Commission 2012) – contain a clear definition of the investment required to reach the targets set. But this investment is simply not happening, the reason being that austerity policies have gained the upper hand.

At the same time, global greenhouse gas emissions continue to increase rapidly and, in mid-2013, carbon-dioxide (CO_2) levels in the atmosphere exceeded 400 parts per million for the first time in several hundred thousand years (EIA 2014). The UN International Panel of Climate Change (IPCC) 5th Assessment report (IPCC 2013) delivers convincing scientific evidence that the climate is already changing and that extreme weather events are expected more frequently. Policies that have been implemented suggest that the most likely long-term average temperature increase will be between 3.6 °C and 5.3 °C (compared with pre-industrial levels), with most of the increase occurring this century. Europe is losing momentum in greening its economy and the leadership claimed by it in this sphere in the past is quickly eroding. The greatest setback suffered by Europe in the last two years has been in clean energy investment. At the same time, fuel poverty is growing and the public support for green policies is diminishing, as the decreasing affordability of energy prices is frequently associated with support for renewables (see also ETUC and ETUI 2013: 85-87). This chapter argues for a policy shift that will give a serious boost to green investment.

Topics

Greenhouse-gas emissions in Europe

Figure 8.1 Greenhouse gas emissions as percentage of emissions in the base year 1990



Source: EEA dataservice (2013).
Note: EU15 and EU27 values for 2012 are preliminary.

Greening through recession

Europe has in the past laid claim to a leading role in climate policy and in decarbonising its economy. However, though it remains the region of the world with the most comprehensive climate policy framework, Europe is now, at the same time, forfeiting its 'climate policy leadership'. As we show in this chapter, even though greenhouse-gas (ghg) emissions have indeed decreased, most of the decrease is due to contraction of the European economy, while other regions of the world are able to boast higher emission reductions and, at the same time, higher growth. Europe is also the main laggard in clean energy investment in the recent years.

Despite progress in some countries, global energy-related CO2 emissions increased by 1.4% in 2012 to reach 31.6 gigatonnes (Gt), a historic high. Developing countries accounted for 60% of global emissions in 2012, up from 45% in 2000. In 2012, China had the largest share in the increase in global CO2 emissions, but its growth in that year was one of the lowest in a decade, driven largely by the deployment of renewables and a significant improvement in the energy intensity of its economy.

In the United States, a switch from coal to gas in power generation helped reduce emissions by 200 million tonnes (Mt), bringing them back to the level of the mid-1990s. Emissions in Europe declined by 50 Mt as a result of economic contraction, growth in renewables, and a cap on emissions from the industry and power sectors.

Figure 8.1 shows the development of greenhouse gas emissions in Europe between the reference year of 1990 and the latest available year, 2012. As ghg emissions in 2012 were down by 18.3% for the EU27 and by 15.3% for the EU15, the 2020 target is within reach (data take account of the effect of the clean development mechanism, but values for 2012 are still preliminary). Although Europe will thus meet the 2020 target of reducing greenhouse gas emissions by 20% compared to the level of emissions in the reference year, there is actually no reason for satisfaction. As Figure 8.1 shows, substantial reductions over the years were correlating with decreasing output, whether on account of the transformation crisis in central-eastern Europe and eastern Germany in the early nineties, or of the great recession triggered by the financial crisis in 2008 and 2009. In the upward turn of the double-dip recession in 2010 ghg emissions were growing by 2-3% for the EU15 and the EU27 respectively. In the next two years, stagnation and recession contributed to a decrease in emissions to approximately the 2009 level.

Preliminary results for 2012 show a 0.5% decrease for the EU15 that is broadly in line with the GDP change, while for the EU27 preliminary data indicate a 2.8% reduction in emissions.

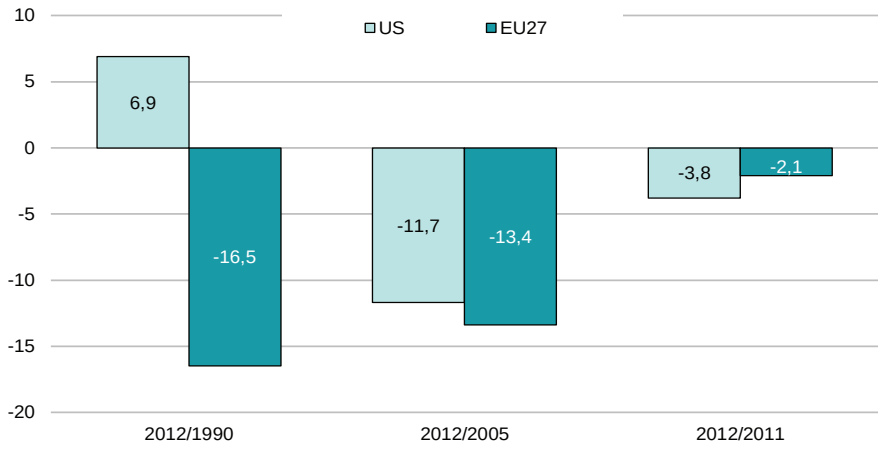
Although a modest absolute decoupling of ghg emissions from GDP growth had been achieved over the years, the result does not place Europe on a sustainable track of emission reductions, especially in the event of a more dynamic future economic development.

This modest decoupling, what is more, is largely the result of changes in the energy mix that entail energy sources generating lower emissions, rather than of improvements in energy efficiency, as will be show in the next sections. Energy saving has the greatest potential in reducing greenhouse-gas emissions and in providing more cost-efficient solutions.

The current path of emission reductions is far from sufficient to reach the 80% reduction target by 2050. Even the compromise of a 40% reduction target for 2030 proposed by the European Commission would require more effort than is suggested by current performance. There is, in any case, a need for Europe to step up its decarbonisation efforts substantially in the future.

Greenhouse-gas emissions: Europe and the US

Figure 8.2 Change in CO2 emissions, US versus EU, %



Source: EPA, EEA, EIA, Eurostat and Rhodium Group estimates.

Two ways to achieve a non-sustainable reduction of emissions

In the United States, a switch from coal to gas in power generation helped reduce emissions by 200 million tonnes (Mt), bringing them back down to the level of the mid-1990s.

The American economy performed better than Europe in 2012, growing at 2.2% year-on-year. Yet CO2 emissions fell faster in the US than in Europe – by 3.8%.

Due to the controversial shale gas boom a large-scale shift from coal to natural gas in the power sector reduced the carbon-intensity of the American economy by 5.9%, which was more than enough to offset stronger GDP growth. As Figure 8.2 shows, US CO2 emissions are now 11.7% below 2005 levels, not far behind Europe's 13.4%, although Europe had been the unquestioned forerunner in emission reductions during the previous period (Houser 2013).

When comparing the achievements in CO2 reductions by the US and Europe in two different periods – 1990 to 2005 and post 2005 – a sharp contrast appears, as Figure 8.2 illustrates.

The US, which did not sign the Kyoto Protocol for emission reductions commitments, had been the clear laggard in reducing CO2 emissions between 1990 and 2005. In fact, CO2 emissions in the US grew by 18.6% in those 15 years, while Europe still achieved a modest decrease of 3.1%. Figure 8.2 shows that the US still has an emission increase of 6.9% for the entire period, while Europe achieved a reduction of 16.5%. It should be noted also that per capita ghg emissions are twice as high in the US as in Europe, as is per capita energy intensity as shown in the next pages. The trends from 2005 show, even so, a sharp turn in favour of the US such that in 2012 the US actually outperformed Europe.

It is true that the background of the US CO2 reductions is the controversial boom in shale gas extraction. The technology is widely disputed and carries serious environmental risks. Moreover, placing greater stakes on fossil fuel, even if gas and oil are 'cleaner' than coal, is not a sustainable solution.

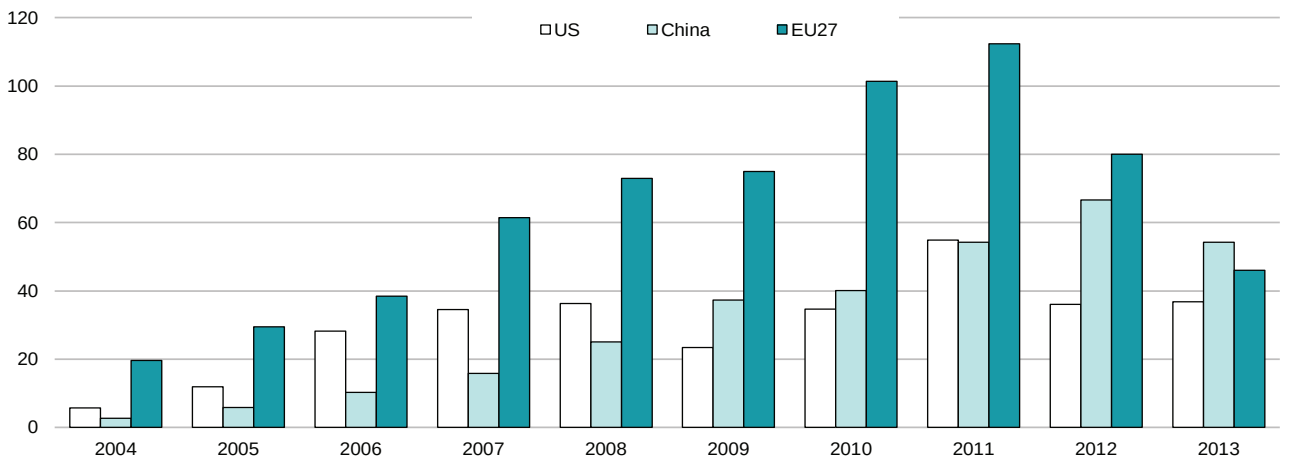
The impressive decline in US emissions in 2012 will also turn out to be short-lived in the absence of new policy either on federal or state level. Coal has already clawed its way back into the power sector due to rising natural gas prices. Coal's share of US power generation is back at 40%, after falling to a low of 33% in April 2013, and electricity demand is growing due to continued economic recovery and colder weather than in 2012. US CO2 emissions were up by 1.5% during the first two months of 2013 (EIA 2014).

As for Europe, given the significant drop in emissions in the last two years, EU ETS allowances are trading at very low prices, creating room for coal to gain back market shares in Europe as well. Oil demand will continue to decline, which will limit the impact of increased coal consumption on total emissions. The net effect is likely to be a very modest decline in EU emissions in 2013, if there is a decline at all.

The apparent success of the US in cutting emissions and catching up with Europe in the last decade is clearly not a sustainable way of decarbonising the economy. Nor is it a model. It nonetheless delivers lessons for Europe on how to strengthen its climate-change policy strategy.

Clean energy investments

Figure 8.3 New investments in renewable energy (USD bn)



Source: BNEF (2013 and 2014).

Collapsing European investment in renewables

Global clean energy investment has fallen substantially for the second year in 2013 according to data from Bloomberg New Energy Foundation (BNEF 2013).

The third quarter's decline in investment will push the year's overall investment in renewable energy and energy-smart technologies down below 2012's $281 billion, an investment value that was itself 11% down on the record established in 2011.

The latest setback reflects policy uncertainty in Europe, the lure of cheap gas in the US, a levelling-off in wind and solar investment in China, and a general weakening of political will in major economies.

The collapse in clean energy investment is most spectacular in Europe. Figure 8.3 shows that when compared to the investment peak in 2011, a major setback of almost 30% occurred in 2012. The negative trend seems to be continuing, if not accelerating. Data available for the first three quarters of 2013 indicate that as much as a 50% drop in investment compared to 2011 can be expected.

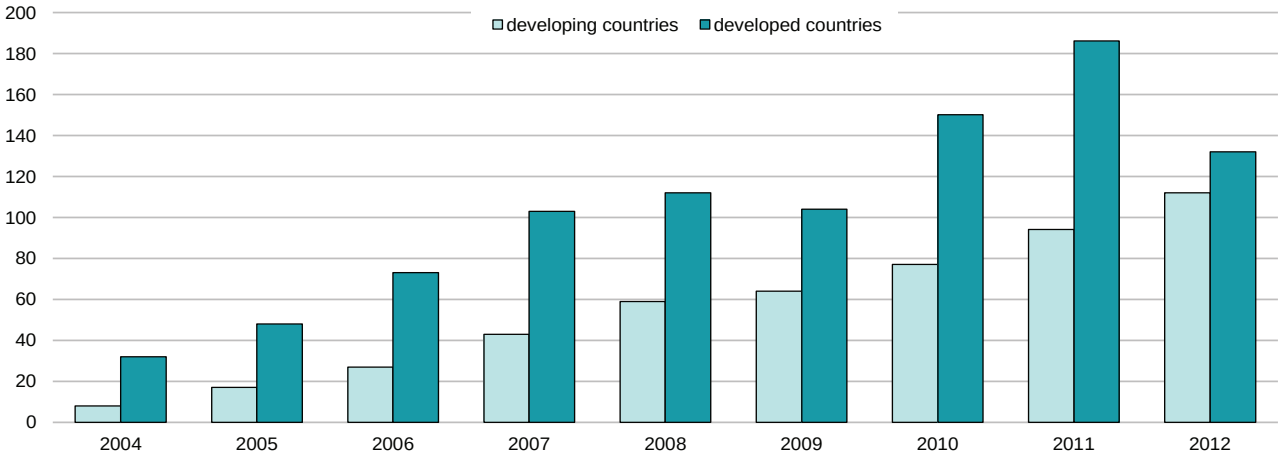
Figure 8.4 shows the changing shares in global clean energy investment of developed and developing economies. Before 2006 developed industrialised countries accounted for three to four times the clean energy investment made by developing countries. Between 2008 and 2011 the lead of developed countries had been reduced to a factor of two. Data for the last fully available year in 2012 show a substantial narrowing of the gap. Preliminary results for 2013 indicate that this will be the year when developing countries catch up with the investment level achieved by developed economies.

This clearly indicates that Europe (which accounts for the largest drop in clean energy investment in the last years and is thus responsible for the bulk of the drop for the developed country group) is losing ground rapidly.

Even if it is China that made the largest contribution to the global increase in greenhouse-gas emissions, with its emissions rising by 300 Mt, or 3.8%, this level of growth is one of the smallest in the past decade and less than half of the increase in emissions in 2011. This indicates the progress achieved by China in terms of climate policy, reflecting above all Chinese efforts to install low-carbon generating capacity and achieve improvements in energy intensity. While total electricity generation in China increased by 5.2%, coal input to power generation grew by only 1.2%. As a result the energy intensity of the Chinese economy decreased by 13.5% between 2006 and 2012.

Clean energy investments

Figure 8.4 New investments in renewable energy (USD bn)



Source: BNEF (2013).

Europe falling also behind its own targets

Not only is Europe losing its climate policy and decarbonisation leadership in the world, as Figures 8.3 and 8.4 show, but it is lagging behind its own commitments as well.

With regard to its 2050 targets, there is a yearly investment gap of nearly €300 bn. As a result of calculations by the European Investment Bank (EIB), compared to investment levels in 2011 an additional investment of €220 billion to €380 billion per year is needed to move the EU economy on to a path that would double emission reductions in order to fulfil the 2050 climate policy targets. This additional need for investment adds up to between 1.2 and 2.1% of EU GDP (Kolev et al. 2012).

The EIB study also highlights that investment directly aimed at energy savings is projected to account for some 60-70% of the additional investment needed to accelerate the decarbonisation of the EU economy. It also shows that the difference between the most and the least capital-intensive scenarios is almost entirely due to investment in energy savings. This reveals that the most capital-intensive decarbonisation path is the one that envisages a greater role for energy savings than alternative scenarios, which rely more on renewables, carbon capture and storage, or nuclear energy.

On the one hand, investment in energy saving, such as retrofitting buildings, is expected to make up the bulk of the investment required to decarbonise the economy. Here Europe clearly has a huge investment need. On the other hand, Europe is lagging most seriously behind its own EU2020 targets in improvements in energy efficiency. Figure 8.5 shows that final energy consumption in the EU27 had grown by over 7% between 1990 and 2010. Per capita energy intensity in 2010 was 2.3 tonne oil equivalent (toe) in the EU27 and 4.2 toe in the US, while China, with its lower development and consumption level, had a per capita energy use of 1.1 toe. The world average in 2010 was 1.2 toe (EEA 2013).

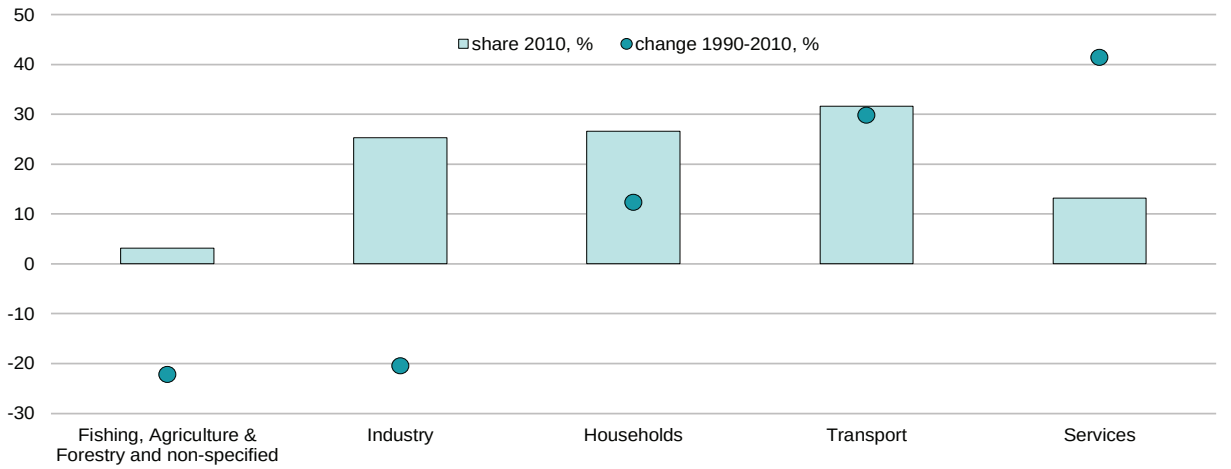
Figure 8.5 also shows final energy consumption and its change by economic sector for the EU27. Industry, with a 25% share in energy consumption, was the only major economic sector to achieve a reduction in energy consumption and, at 20%, this is also quite substantial (agriculture, which achieved a similar percentage reduction, has a low share in total emissions). On the other hand, the energy consumption of the transport sector grew by nearly 30% and that of the services sector by over 40%.

The household sector which, with 26%, has a higher share in energy consumption than industry has also seen an increase in its energy consumption amounting to 12.5%. This indicates that, although energy-efficiency investment like insulating and retrofitting buildings is high on the European agenda (and a number of member states have launched promising programmes), the results so far are modest.

Given these facts and the chronic underinvestment in European economies that is the major reason behind the stagnating economy, one may wonder why European leaders are still not capable of launching the investment programme that is actually underpinned by the Europe 2020 Strategy.

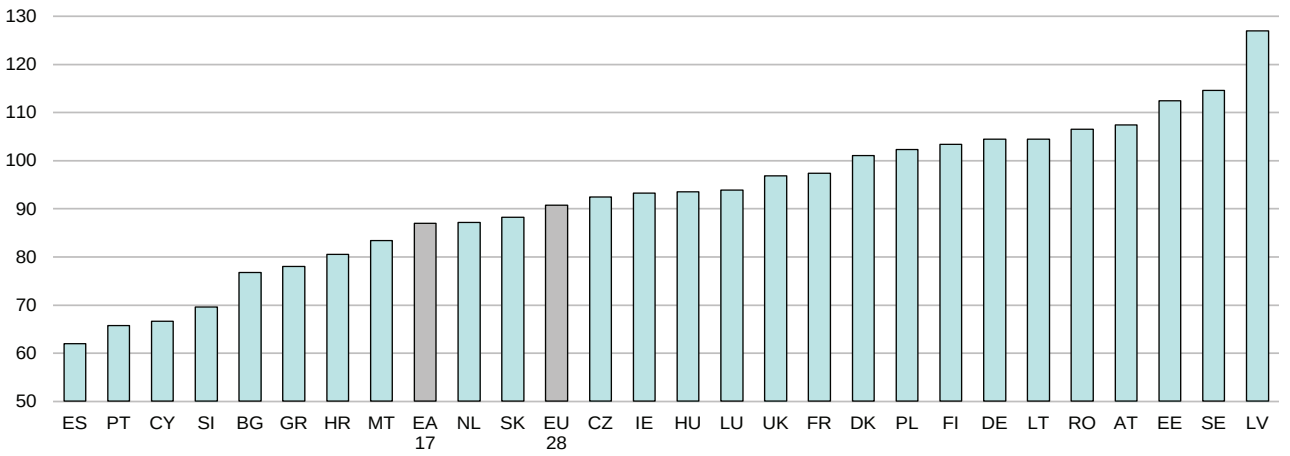
The investment rationale

Figure 8.5 Final energy consumption by sector



Source: EEA (2013).

Figure 8.6 Index of employment in construction industry, 2013 Q2 (in %, 2010=100,0)



Source: Eurostat (2014).

Two birds with one stone

Between 1990 and 2010 final energy consumption has increased by over 7% in the EU27 and the household sector had a large share in this, as Figure 8.5 shows.

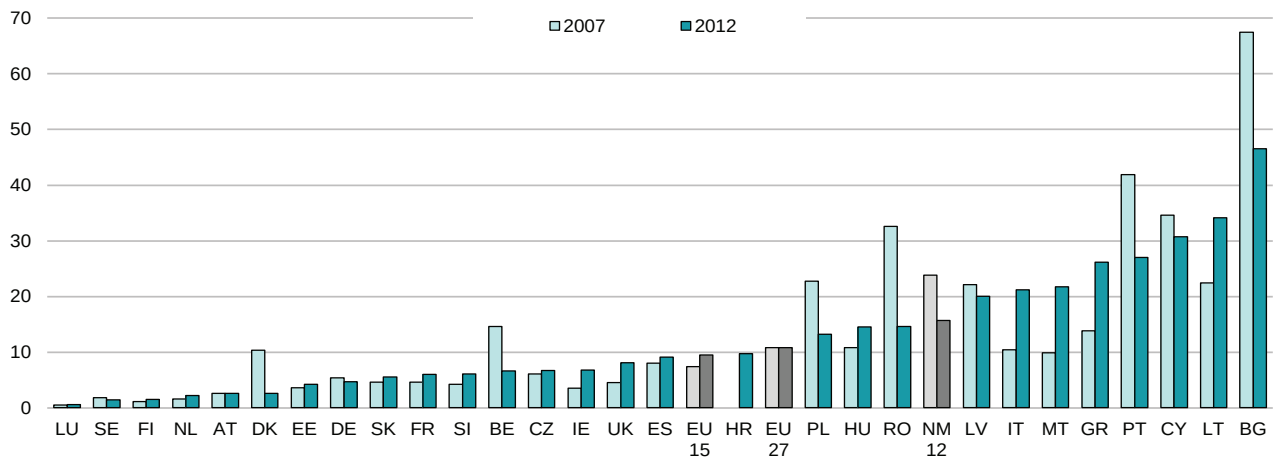
While industry has managed to reduce energy consumption by 20% in that period, it increased by 12% in the household sector. At the same time per capita energy intensity in the EU27 grew by 31.9% (EEA 2013). Lack of progress in energy efficiency is itself a strong argument for more investment in energy-saving, such as building retrofitting.

Figure 8.6 delivers another argument. As is well known, the construction sector had been the hardest hit by crisis when the real estate bubble burst in a number of countries. Employment losses in this sector have also been among the highest.

While employment losses since 2010 in the EU27 were nearly 10% (13% for the Euro area), the construction sector in this period lost 38% of its employees in Spain, nearly 35% in Portugal and 23% in Greece. Stepping up investment for the retrofitting of buildings would induce growth, create jobs, improve fuel poverty, as well as benefitting the environment.

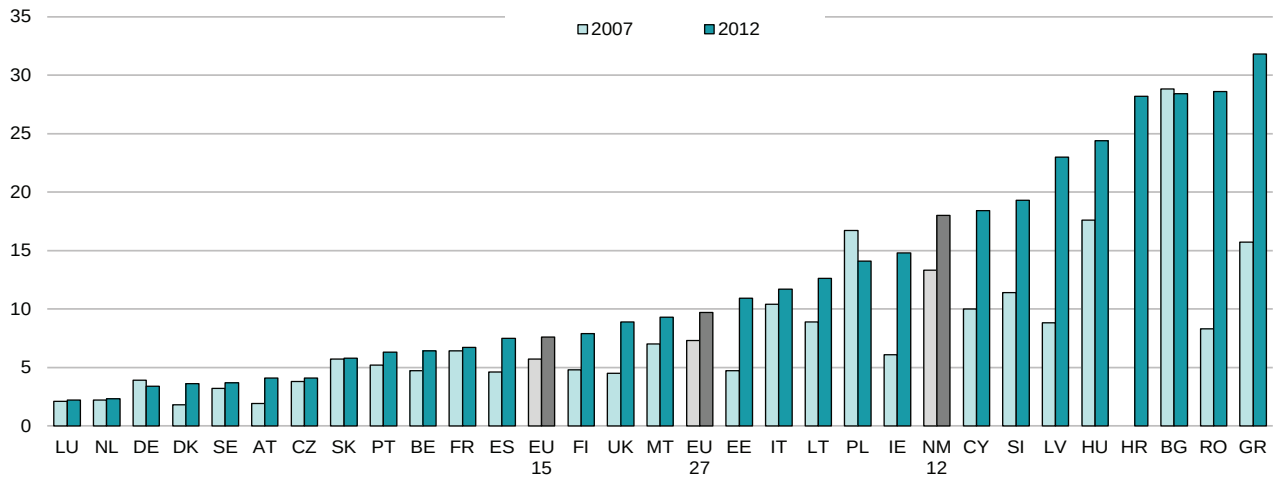
Social implications: fuel poverty and utility bill arrears

Figure 8.7 Fuel poverty in the EU: share of the population unable to keep the home warm (%)



Source: Eurostat (2013). Note: AT and IE 2012 data are from 2011; HR (2007) no data.

Figure 8.8 Utility bill arrears in % of total population, 2007 and 2012



Source: Eurostat (2013). Note: AT and IE 2012 data are from 2011; HR (2007) no data.

Divided Europe

Fuel poverty, defined as the share of the population unable to heat the home adequately (a major indicator of material deprivation), has reached alarmingly high levels in a number of member states. What is more, there is a growing division among member states in this respect.

Figure 8.7 shows fuel poverty rates in EU member states for 2007 and 2012 based on EU SILC data. Fuel poverty is characteristically higher in the new member states (NMS) than in the EU15; in the former 23.8% and in the latter 9.5% of the population were affected in 2007.

By 2012 fuel poverty in Greece and Italy had doubled as a result of the crisis and austerity policies.

Utility bill arrears, i.e. the share of the population who delay more than three months in paying their bills, shows an alarmingly increasing trend in most EU member states.

Figure 8.8 shows utility bill arrears by member state for 2007 and 2012. NMS once again have higher levels (13.3% for 2007 and 18% for 2012) than EU15 countries (5.7% for 2007 and 7.6% for 2012), but for this indicator both country groups show an increasing trend. The worst situation is in Greece where utility bill arrears have doubled since 2007 to reach the highest level in any EU member state, namely 31.8%, in 2012. The worsening of the situation is most dramatic in Romania, where arrears rose from 8.3% in 2007 to 28.3% in 2012.

Conclusions

An appeal for green investment with a triple dividend

Europe has laid claim to a leading role in climate policy and decarbonisation of its economy.

We have shown that, even if greenhouse-gas emissions in Europe have decreased substantially and the 2020 target will be reached, to a great extent this is due to the weak performance of the European economy, while other regions of the world can boast simultaneously higher emission reductions and higher growth. Europe is also the main laggard in clean energy investment over recent years and 2013 is the first year when developing countries (non-OECD) would appear to have overtaken the developed ones (OECD) in terms of clean energy investment. These two trends would seem to indicate that Europe's self-proclaimed climate policy leadership – its assumption of some kind of exceptional status – is over and that attitudes like 'more ambitious climate targets if others do more' are no longer justified. Europe thus needs to make more sustained climate policy efforts and such efforts should be apparent in the 2030 climate policy targets. Besides establishing a solid and comprehensive climate policy framework that is also linked to an industrial policy strategy, the major aim of this chapter has been to argue for a much higher degree of green investment.

The rationale of our argument was built up as follows. Clean energy investment is at a historical low and progress in energy efficiency – one of the key elements of a decarbonisation path – is extremely modest. In this context, we showed that between 1990 and 2010 the EU27 final energy consumption grew by 7%, that ghg emission reductions were achieved by a mix of low growth/recession and some minor contribution from the effect of positive changes in the energy mix, energy efficiency improvements playing only a marginal role. The sectoral breakdown showed that, among the major sectors, industry alone made a substantial contribution to energy efficiency improvement (20% lower energy consumption). Services and transport were the laggards (by 41 and 30% increase respectively) but the household sector also performed poorly (a 12 % increase in energy consumption).

This trend makes one wonder where are the effects of energy saving investment, above all in insulation and retrofitting of buildings. Both the ETUC Investment Plan and iAGS report by the OFCE-IMK-ECLM research consortium argue for more green investment. Yet one needs to look no further than the mid-term EU climate policy objectives, the EU2020 Strategy and Commission documents like the Energy Roadmap 2050, to see that the need for green investment had already been established. This chapter also refers to an EIB-Bruegel report containing calculations that Europe's own climate policy objectives determine the need for additional annual investment of between 1.2 and 2.1% of EU27 GDP (or between €220 and €380 billion) compared to the current (2011) investment level. A major part of this investment should be devoted to energy-saving measures.

This additional investment would help to give a kick to the anaemic European economy and set it on a sustainable growth trajectory. The employment-creation effect of such investment would also be crucial. This chapter also indicated that it is precisely the construction industry, which suffered the highest employment losses during the crisis of up to 38%, that would benefit from a dynamic investment programme in energy saving. This form of investment also has a guaranteed return and, given the low interest rate environment, the requisite financing background is also present.

A further aspect that we have emphasised in this chapter is the case of just transition. For trade unions this is a key issue. We showed the alarming trends in fuel poverty and the inability of a large section of the population to pay utility bills given the adverse effects of austerity policies and the lack of social policy intervention. In Greece both fuel poverty and utility bill arrears have doubled since 2007 and in Bulgaria 46% of the population suffers from fuel poverty.

Beside their dramatic social impact, current European policies also put energy transformation efforts at risk, as the lack of affordable utility service prices is often associated in people's minds with the promotion by the authorities of renewable energy generation. Proper social policy measures, including social tariffs for energy, are needed to redress this inequality and at the same time reverse the diminishing public support for the energy transition.

What is most essential of all, however, is investment in clean energy and energy efficiency.

There is nothing at all new here: the need for investment is a clear consequence of policy targets identified and defined long ago. The dividend, were these policies to be seriously promoted, would be higher growth and employment creation, a higher probability of fulfilling long-term climate policy commitments and a greater degree of social justice. The only question is why this is not happening, why such vitally necessary policies are not being wholeheartedly pursued.