

# The European divide in clean energy and fuel poverty

## Introduction

2012 was a 'black' year for the planet. Progress towards a more sustainable production and consumption model had been stalled and no end to the resource-depleting practices of the past was visible on the horizon.

Despite efforts to keep global warming, by the end of the century, below a 2°C rise above the pre-industrial climate, higher levels of warming are increasingly likely. In order to meet the target in question, climate policy commitments based on the Kyoto Protocol aim at a 50 per cent reduction of global greenhouse gas emissions (ghg) by 2050, including an 80% ghg reduction for industrialised countries, based on the reference year of 1990. Scientists agree that countries' current United Nations Framework Convention on Climate Change emission pledges and commitments would result in additional warming of 3.5 to 4°C (World Bank 2012). According to the 2012 Emissions Gap Report of the United Nations Environmental Programme (UNEP), the estimated emissions gap in 2020 is 8 to 13 GtCO<sub>2</sub>e (Gigaton CO<sub>2</sub> equivalent) compared to what would be needed for a 'likely' chance of being on track to remain below the 2°C target. This forecast gap is now two GtCO<sub>2</sub>e higher than calculated for the latest report in 2010 (UNEP, 2012). This means that, on the basis of current policies and their implementation, the gap between where we should be in 2020 and where we are heading on the basis of present performance is now equivalent to approximately 20% of total global emissions in 2010 (49 GtCO<sub>2</sub>e) and is still growing. This increasing shortfall is what constitutes the real bad news.

Nor is any binding global agreement on emission reductions within sight.

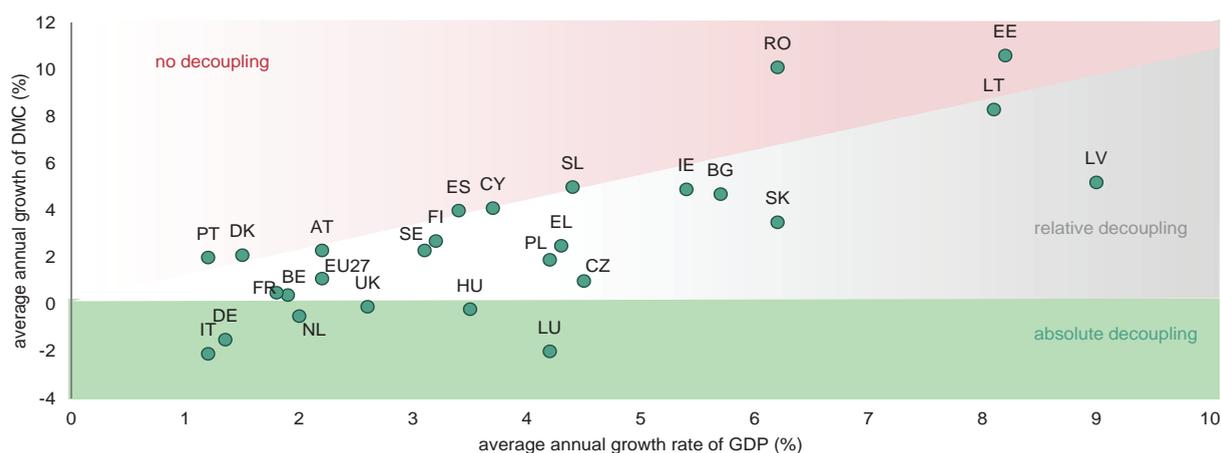
The most worrying fact of all is that a widespread resignation is gaining ground based on acceptance that the 2°C target cannot be met and that the best we can now do is adjust to the severe consequences of this failure. Both in Europe and globally climate policy ambitions seem to be fading away as policy efforts become focused on crisis management and austerity. New illusions appear in relation to pseudo-solutions for prolonging the age of fossil energy in forms such as shale gas extraction and a possible renaissance of coal. A new policy focus seems to be emerging in favour of affordable energy, irrespective of the effects on the climate, giving rise to a conflict between the financing required to develop renewables and the demand that energy remain affordable. Political uncertainty and cuts in green subsidies meant that 2012 was the first year in a decade to see a drop in global clean energy investments.

## Topics

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## Decoupling economic growth from resource use

Figure 5.1 Yearly average change of domestic material consumption and GDP between 2000 and 2007 by member state



Source: Eurostat (2011).

### No breakthrough in sight

It is abundantly clear that past trends of material and resource use cannot be continued on into the future. If mankind wishes to preserve economic and social development, the impact on the planet of such development – in terms of expenditure of materials and resources – is going to have to be limited and indeed decreased. If economic growth is to be maintained, the only way forward is to 'make more out of less', in other words, to decouple economic growth from resource use.

Annual changes in domestic material consumption (DMC) of member states against GDP growth rates for the period 2000 to 2007 show that decoupling GDP growth from resource use has been taking place, if at all, at only a very sluggish pace. Stable or decreasing DMC has so far tended to be observable only where GDP growth is low or in the case of recession. High GDP growth rates are accompanied by higher material use, in better cases involving only moderate increases. Between 2000 and 2007, absolute decoupling of resource use from economic growth (decreasing DMC) occurred in only six out of 27 EU member

states (Luxembourg, Italy, Germany, the Netherlands, Hungary and the UK) as shown in Figure 5.1. Eleven member states showed relative decoupling, with DMC increasing at a slower rate than GDP. No decoupling, effectively signifying a deterioration of the situation, was the outcome in the ten remaining countries, where DMC increased faster than GDP, indicating that resource productivity actually declined in those countries during 2000 to 2007. This group of the worst performers is rather heterogeneous, consisting of cohesion countries from the East (Estonia, Romania and Slovenia), from the South (Portugal, Spain and Cyprus), interestingly also Denmark, while Sweden, Finland and Austria have growth rates of material use close to GDP growth such that they are on the border between relative decoupling and no decoupling (i.e. also failing to perform well).

In the 2012 and 2011 Benchmarking reports (ETUC and ETUI, 2012, chapter 6; ETUC and ETUI, 2011: 52-53) we showed that a division in terms of resource productivity has become apparent among member states in Europe. There was a clear divide in terms of resource efficiency, as new member states had much lower values with an almost 20-fold gap between the worst performer in this respect, Bulgaria, and the best performer, Luxembourg. Meanwhile, in terms of per capita greenhouse

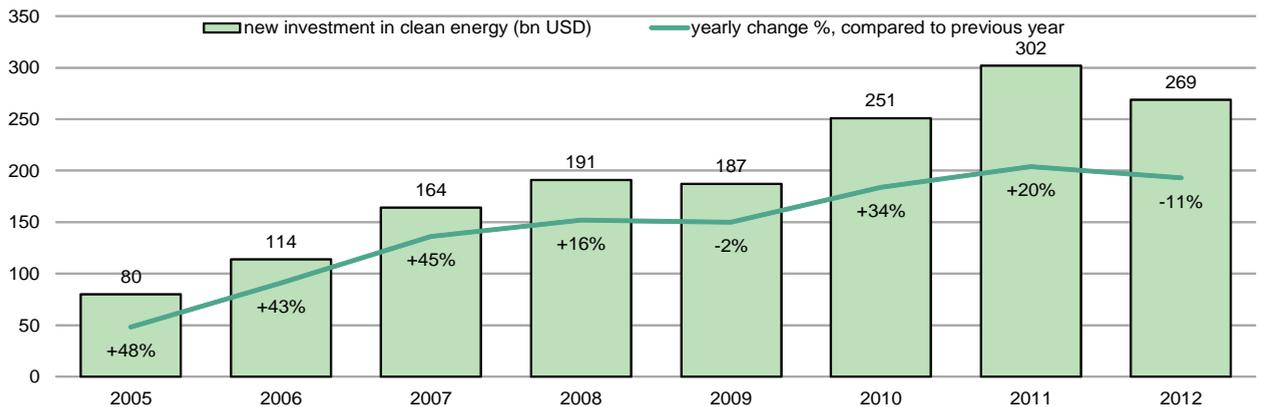
gas (ghg) emissions, the divide was just the opposite, with Luxembourg (as the richest country in the EU) having by far the highest per capita emissions, while poorer CEEs had low values.

As thus described, decoupling trends show an extremely mixed picture (see also ETUC and ETUI 2012: 82) with no visible trend in terms of a possible 'green' convergence between member states. The lack of progress in decoupling trends also shows that we remain light-years away from the normative target known as 'Factor Five' – which means improving resource efficiency five times (produce current GDP with one fifth of resource input) – that had been set as a target for 2050 (von Weizsäcker *et al.* 2009).

This highly ambitious and yet necessary transformation can take place only in the presence of policies based on hard incentives for economic actors to optimise activities on improvements in resource productivity, such as they have already done in relation to labour productivity (such measures are mostly linked to price incentives, such as the effective carbon price for enterprises /e.g. via carbon tax and or emissions trading, but the price of other resources is also relevant).

## Investment in clean energy down

Figure 5.2 Global total new investment in clean energy (2005-2012)



Source: BNEF (2013).

## Austerity and policy uncertainty take their toll

After eight years of rapid growth, total clean energy investment (private and public) worldwide suffered a setback of 11 per cent in 2012 (BNEF, 2013; Figure 5.2). This is a very sudden and serious trend break, as the world saw double-digit growth in this respect throughout the years of the previous decade, and still in 2010 a 34% jump in clean energy investments was recorded. In 2009 when world trade and investments suffered a demand shock, investment in renewable energy did not suffer seriously (a mild two per cent decrease). The main reason for the large drop last year was that many governments in industrial nations slashed subsidies for technologies ranging from wind turbines to solar power and biomass installations in the framework of austerity measures and due to 'changed' priorities (most notably in Italy and Spain). At the same time, clean energy investments in emerging economies (e.g. China) grew rapidly, albeit not sufficiently to offset the negative trend triggered by developed economies (see also Figure 5.3).

The declines are thus due primarily to the debt crises in the United States and Europe, with huge cuts in incentives to bolster energy transformation, but also to a 24 per cent decline in solar panel prices last year.

All segments of the renewable energy industry experienced a drop in investment. Solar energy investments made up the largest part with overall investments of \$142.5 billion in 2012, a 9 per cent decline from the previous year. The amount of total wind energy investments was \$78.3 billion, down by 13 per cent from the previous year. Investment in energy-smart technologies, such as smart grid, energy efficiency and electric vehicles, fell by 7 per cent to 18.8 billion.

This trend change in green investments is a dire message for the future, further deepening the already grave concerns about attainment of the 2050 climate policy goals (see ETUC and ETUI 2011, Chapter 5).

## Investment in clean energy down

Figure 5.3 New investment in clean energy 2012 (USD bn), 2012/2011 change (%)

| Country      | New investment in clean energy (bn USD) | Yearly change %, compared to previous year |
|--------------|---|--|
| World        | 268.7                                   | -11  |
| China        | 67.0                                    | +20  |
| USA          | 44.2                                    | -32  |
| Germany      | 23.0                                    | n.a.                                       |
| Japan        | 16.3                                    | +75  |
| Italy        | 14.7                                    | -51  |
| South Africa | 5.5                                     | Cca +5000                                  |
| Spain        | 3.0                                     | -68  |

Source: BNEF (2013).

## Austerity affects green investment

Above we have shown global trends in clean energy investment over the last eight years (Figure 5.2), including the disturbing setback suffered last year.

We now turn to look at the composition of clean energy investment and especially the changes by geographical region in 2012. What we see is a dramatic gap between industrialised developed economies and emerging economies. The divide can also be interpreted as being between countries and regions experiencing an austerity trap and those that have refrained from adopting this self-defeating therapy.

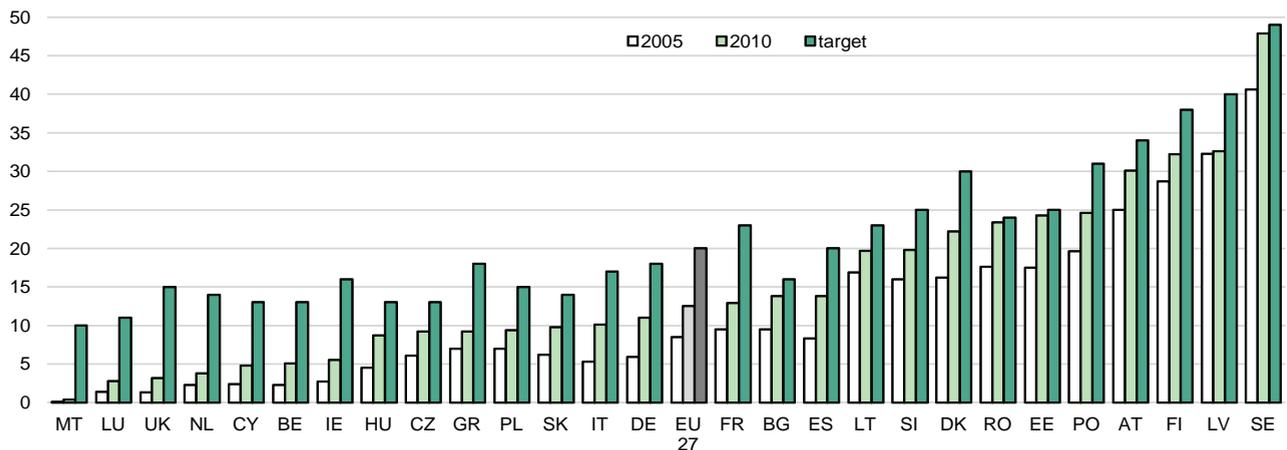
As Figure 5.3 shows, in 2012 investment in clean energy fell by 32 per cent in the United States, by 51 per cent in Italy and by 68 per cent in Spain. Italy and Spain used to be leading investors in solar energy in Europe; after huge cuts in previously available subsidies, however, the markets of these countries collapsed, with huge implications for Europe as a whole. While for Europe as a whole there were no aggregate figures available for the year 2012, the third quarter showed a devastating 29 per cent drop in clean energy investment compared to the same period in 2011.

On the other hand, China's total clean energy investment in 2012 surged by 20 per cent to a record \$67.7 billion, making this country now by far the largest investor in clean energy in the world. In 2012 investment in clean energy in China was more than 50 per cent above the U.S., the second largest clean energy investor in the world with \$44.2 bn.

South Africa saw an exceptional investment surge to \$5.5 billion from 'a few 10s of millions in 2011' as a result of its wind and solar tender. Japan's new subsidy programme helped investment rise as much as 75 per cent to \$16.3 billion in the wake of the Fukushima disaster. In Europe, especially its southern states, due to widespread cuts in public spending, were to be found the worst performers with substantial cuts of more than 50% of green investment compared to the previous year. It is essential to emphasize that this trend break in clean energy investments in 2012 is a new phenomenon and does not yet appear in longer-term performance (for renewable energy trends of the period 2005-2010 with national targets for 2020, see Figure 5.4. and the next section). It constitutes, nonetheless, a strong warning signal as to the grave potential impact of austerity and policy uncertainty.

## The share of renewables and 2020 targets

Figure 5.4 Share of renewable energy and target (% of total energy generation)



Source: Eurostat (2012).

### More ambitious countries also perform better

The EU target for 2020 is to achieve a 20% share of total energy consumption from renewable sources. Targets were set for all member states by the 2009 Directive on renewable energy (European Parliament and Council 2009). Factors such as the different starting points, renewable energy potential and economic performance of each country were taken into account in setting the targets.

As regards the share of renewable energy achieved within the energy mix of individual member states, Figure 5.4 gives an overview of trends, showing actual shares in 2005 and 2010 (latest available year) and national targets for 2020. We see a divided picture, as regards both ambitions (targets) and actual performance. The Baltic and the Nordic countries have the highest targets, with Austria and Portugal also in this ambitious group. Slovenia and Romania also have rather high targets (25 and 24% respectively) with good proportional fulfilment. The highest national targets have been set for Sweden (49%) and Latvia (42%). For these two countries the overwhelming majority

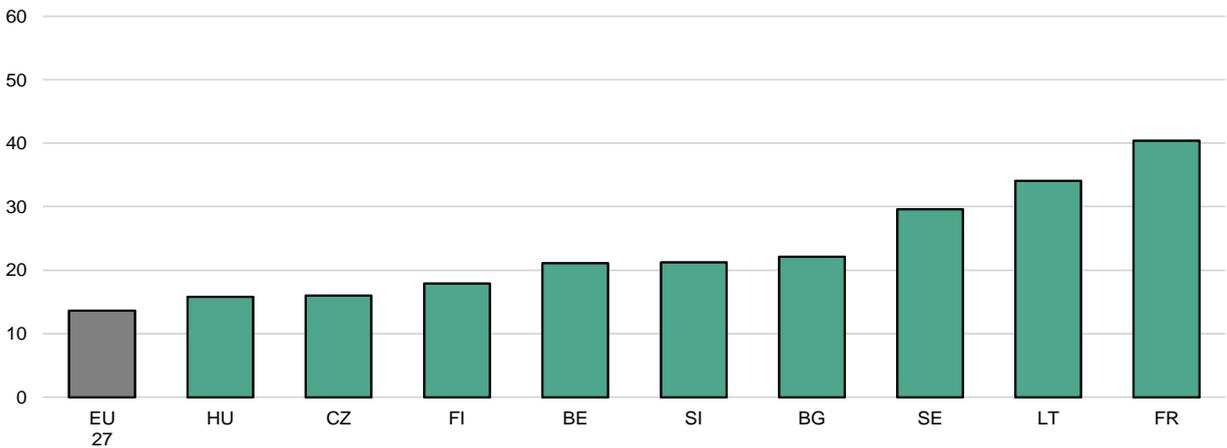
of renewables comes from hydro-energy. Regarding performance, Sweden had almost reached its ambitious 2020 target already in 2010 and Latvia is also not far from having achieved its target. Relatively high fulfilment ratios are characteristic of most of the countries in the upper range of ambitious targets.

Not so in the group of countries with less ambitious targets. Ireland, with a 16% target, had just over 5% renewables in 2010. For countries such as Belgium, Cyprus, the Netherlands and the UK, targets are below 15% with 2010 fulfilment at 5% or below. The extreme laggards are Malta and Luxembourg with targets of 10 and 11% respectively and fulfilment of between 1 and 3%.

It is quite apparent from the above data that there is no observable pattern as regards what country or group of countries has ambitious targets and how fulfilment proceeds. We see the 'wildest' combination of country groups. This suggests that a country's progress in terms of energy transformation depends not on its geographical location, on whether the country is poor or rich (Latvia performing second best, Luxembourg second worst), on whether a country is hit by the crisis (Portugal is making good progress) or not so (The Netherlands is a poor performer). What does matter is policy and determination.

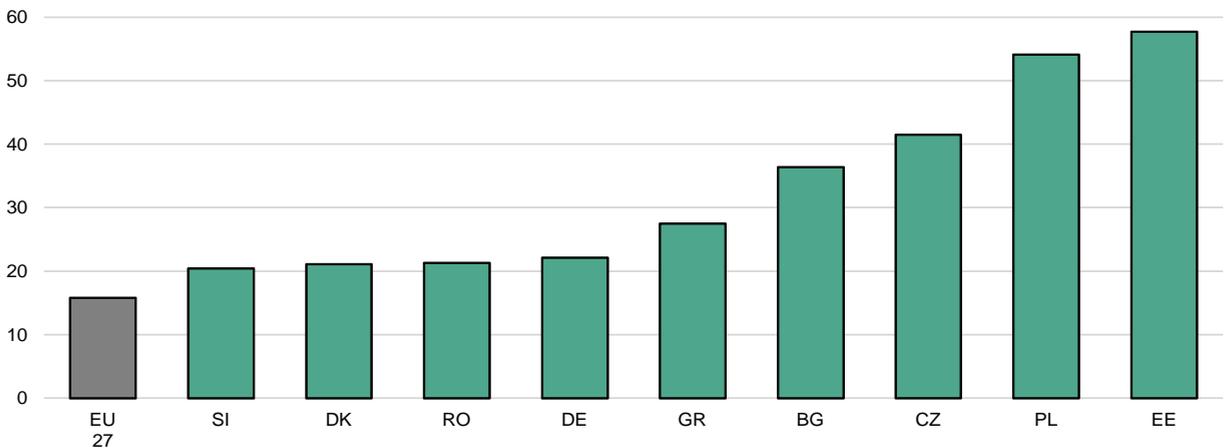
## The share of 'old energy' in the energy mix of member states

Figure 5.5 Share of nuclear energy in energy generation, % - for MS above EU27 average (2009)



Source: Eurostat (2011).

Figure 5.6 Share of coal in energy generation, % - for MS above EU27 average (2009)



Source: Eurostat (2011).

### Europe's energy divide: the laggards

Figures 5.5 and 5.6 list those member states that have a higher than average share in two controversial forms of energy generation, namely, nuclear and coal. Figure 5.5 shows that France has the highest share of nuclear energy with 40.4%, followed by Lithuania (34.1%)

and Sweden (29.6%). Bulgaria, Slovenia, Belgium (21-22%), Finland and the Czech Republic (15-18%) also have above average shares. The EU27 average share of nuclear energy in energy generation was 13.6% in 2010.

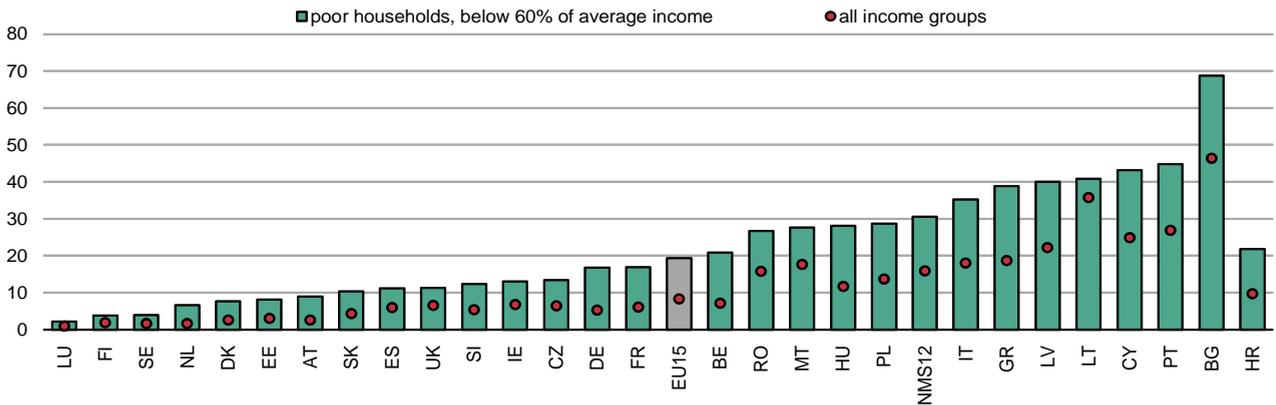
The role of coal and lignite in energy generation is a throwback to the past and with its high CO<sub>2</sub> emissions it represents a major threat to the global climate. Yet it continues to retain a high share in a number of EU member states and, due to its low extracting costs, it is enjoying a late renaissance. While coal

has an average share of 15.6% in EU27 total energy generation, Estonia has the highest share among member states with 57.7% followed by Poland (54.5%) and the Czech Republic (41.5%). Alongside a number of new member states, Greece (27.5%), Germany (22.1%) and Denmark (21%) are also part of the energy generation laggards' club of coal-based energy.

Coal-based energy generation is, in a number of member states (e.g. Poland), still a major source of employment such that a rapid restructuring would raise the risk of mass unemployment.

## Fuel poverty

Figure 5.7 Share of the population who cannot afford to keep its home warm if needed, 2011 (%)



Source: Eurostat EU SILC database (2012).

## High and getting worse...

The term fuel poverty (sometimes called 'energy poverty') is not an exact measure of poverty as such and cannot be compared to general poverty rates. It is, however, one indicator of material deprivation and the term is used in the Survey on Social Inclusion and Living Conditions by posing the question 'Can you afford to keep your home warm, when needed?' (Eurostat, 2012). The share of positive responses is then expressed as a percentage of the total population, or in the share of particular income groups in society.

Fuel poverty in Europe was a significant problem (ETUC and ETUI 2012: 85) and hit alarming levels in 2011 (the latest available year) with huge differences among individual member states, as Figure 5.7. shows. Particularly new member states and crisis-ridden southern European countries are exposed to the threat of growing fuel poverty.

Bulgaria is the most alarming case with nearly half (46.3%) of the total population (red dot in Figure 5.7) unable to keep their home warm if needed. Among the poor segment of the population with income levels below 60% of national average, the share of those experiencing

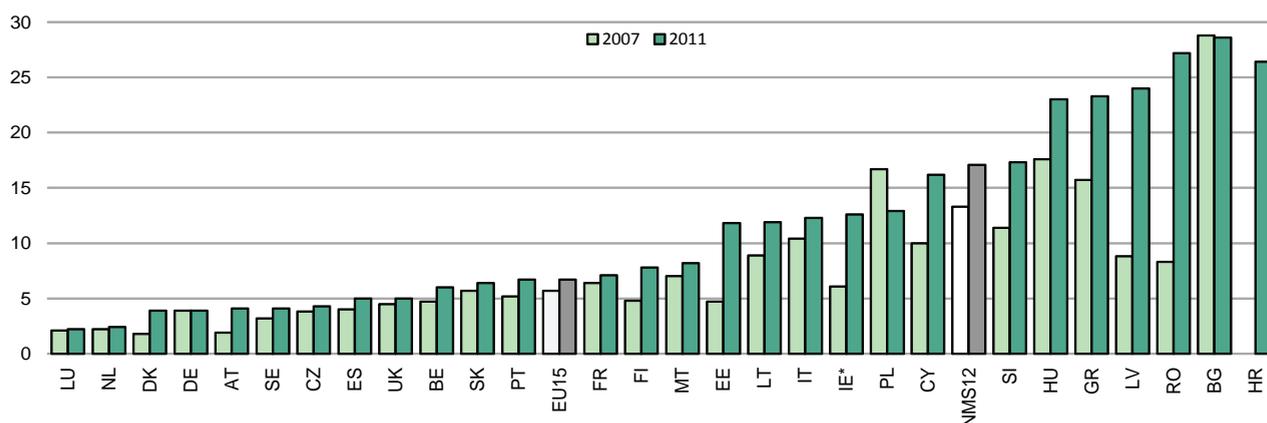
fuel poverty is a dramatic 68.7% (blue bar), more than two thirds of low-income groups. In Greece, Latvia, Lithuania, Portugal and Cyprus between 40 and 45% of the low-income population suffers from fuel poverty. The gap between the new member states (EU12) and the EU15 is persistently high, as for the new member states fuel poverty for the two groups is 15.8% and 30.6% respectively, while for the EU15 these values are 8.3% and 19.3%. The main pattern seems to be that new member states in general are more affected and from within the EU15 only southern European crisis states are included in this group. On the other hand, a number of new member states perform well (Slovakia, Slovenia and the Czech Republic have more favourable values than Germany). Interestingly, Spain is also in a relatively good position. These latter cases indicate that fuel poverty is not an unavoidable plague suffered by crisis-ridden countries but that its existence depends also on social policies and compensation mechanisms.

The overview of countries in regard to their progress in energy transformation, the energy mix profiles, and then the distribution of fuel poverty, indicates that the latter is in no way related to progress towards clean energy. The risk factors were low income levels in general linked also to a low level of social protection (historically this is the case of new member states with notable exceptions)

on the one hand and the effects of austerity measures on the other (southern European countries), the latter being a more recent phenomenon.

## Fuel poverty

Figure 5.8 Utility bill arrears in EU member states (2007 and 2011, in % of total population)



Source: Eurostat, EU SILC database (2012).  
\* Data for IE: 2007 and 2010.

## Gap between EU15 and NMS is huge and growing

We referred to the phenomenon of utility bill arrears in the Benchmarking report of 2012 (ETUC and ETUI, 2012: 86) and, with the availability of new data, we are in a position to demonstrate the effect of the crisis here. For a number of countries the result is depressing indeed. In Romania the share of households with utility bills in arrears more than tripled between 2007 and 2011 (from 8.3% of the population to 27.2%; figure 5.8). In Latvia too an almost threefold increase was recorded, while Greece also suffered a huge increase, from 15.7% in 2007 to 23.3% in 2011. The case of Bulgaria also indicates that this country's problem is truly chronic, insofar as it had the highest level of payment arrears in the EU in both 2007 and 2011 (with 28.8 and 28.6% respectively). Poland, on the other hand, was the only country that experienced a fall in utility bill arrears between 2007 and 2011 (from 16.7% to 12.9%), though it still has rather high levels. The gap between the EU15 and the new member states is huge and growing during the period (with arrears of 5.7 and 6.7% for

the EU15 and with 13.3 and 17.7% for the NMS respectively). The Czech Republic and Slovakia are now again performing well with shares below the EU15 average. Interestingly, according to this indicator, Spain and Portugal are also faring relatively well. This trend is more indicative for the longer-term (historical) income differences between countries, signalling, to some extent, an earlier sluggish rate of income convergence.

It is also important to emphasize that neither of the two measures of energy-related social stress shows any correlation with the progress of clean energy and with the share of renewable energy generation. Sweden, with the highest share and progress in renewables, is one of the countries with the lowest fuel poverty and utility bill arrears. Other countries seen to be performing well in the green transformation of energy generation also do relatively well in social terms. Energy poverty was more linked to general income levels and to lower levels of social protection on the one hand (NMS) and to the effects of the crisis and austerity on the other (some NMS with dramatic levels of fuel poverty and some of the southern European crisis states).

## Conclusions

### No conflict between social and environmental objectives

No essential conflict between environmental and social objectives exists, even if populist and market radical groups, assisted by the climate-change sceptics, do their utmost to suggest the opposite. These groups' main narrative – an approach that has now spread dangerously into mainstream opinion – is that energy transformation is not affordable, that renewable energy is too expensive, that it leads to fuel poverty and to a competitiveness problem for the industry, as proclaimed, for instance, by the German lobby organisation 'Initiative Neue Soziale Marktwirtschaft' (c.f. Aktionsbündnis Energiewende, 2012). In this chapter, we have sought to show that the conflict lies elsewhere. The spectacular break in progress towards clean energy and the rising incidence of fuel poverty actually share common ground in the form of widespread austerity policies and a policy shift away from long-term sustainable actions and priorities towards short-term contingency strategies. Investment in clean energy (wind and solar, as well as energy efficiency) suffered a huge setback in countries that were hit by the debt crisis and, most notably, those that introduced severe austerity policies (especially Italy and Spain). Yet it has to be stressed that not just public but also private investment in clean energy suffered serious setbacks in these countries, indicating that the drop was caused not by short-sighted and ill-designed austerity measures alone but also by an inappropriate reshaping of incentive systems and policy priorities. This is probably the most worrying message for the future, with the growing attention paid to coal-based and fossil-fuel energy generation (shale gas) representing a severely regressive feature of current developments.

It is shocking to realize that these regressive trends and policy changes are frequently based on the fake argument that renewable energy is not affordable and that it leads to fuel poverty (Süddeutsche Zeitung, 2012). The German Environment Ministry, for instance, has proposed to amend the law on renewable energy by freezing the price subsidy for renewables for two years in order to prevent further increase in the electricity price (BMU, 2013). We have shown the alarming trends in fuel poverty, in terms of both households' inability to afford to heat their homes and/or their tendency to fall into payment arrears. The composition of countries most affected by these adverse phenomena has nothing to do with their ambitions or progress towards clean energy. The risk factors observed were low income levels and low level of social protection (new member states) on the one hand and the effects of austerity measures on the other (southern European countries). Austerity thus has had a double bite, entailing a negative effect on clean energy investments but also on households' ability (especially among low income groups) to finance their energy needs. Austerity is self-defeating, as we have already learned in respect to its broad economic impact (Chapter 1 of this publication); in regard to environmental and social consequences, this is even more obviously the case. What is particularly cynical is to play off the two victims of austerity against each other and to claim that environmental and social progress are to be set in opposition to one another. For trade unions too it is of the utmost importance to resist any temptation to argue along such lines. The social crisis is caused neither by excessively ambitious environmental progress nor by attempts to promote non-affordable renewable energy generation. On the contrary, investment in energy efficiency and clean energy can create jobs and make energy use more sustainable, and even affordable.