

THE POLITICS OF EUROPEAN UNION POLICY ON SUPPORT SCHEMES FOR ELECTRICITY FROM RENEWABLE ENERGY SOURCES

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Introduction

The purpose of this contribution is to inquire how attitudes towards different support schemes evolved over time in the organs of the European Union. Its purpose is not to give a detailed overview of directive 2001/77/EC; this has been done elsewhere (Lauber 2005a).

Since 1996, three phases can be discerned in the EU's approach to support schemes for renewable power. In the first phase (1996-1999) DG Energy and DG Competition were characterised by a strong commitment to neo-liberal, "market" or "competitive"¹ instruments for organising the future harmonisation of the sector, although a different undercurrent seems to have been present in DG Energy as well.. Early on, the Commission exerted pressure on several member states to forsake feed-in tariffs and to implement neo-liberal instruments. This approach went against the preferences of Parliament and met with strong opposition from environmental and most renewable energy groups.² After 1998, in the Council it also met with the opposition of the newly elected German government.

In a second phase in 1999-2001, DG Competition tried to force the issue by expanding the concept of state aid– and lost as a result of the Court decision in *PreussenElektra v.*

¹ The quotation marks are meant to highlight that this terminology is already reflecting neo-liberal thinking and may not be entirely appropriate, as shall be shown below. In particular, the Commission ignored the market for RES-E equipment (Hvelplund, 2005).

² The European Wind Energy Association (EWEA) was split between its British members (favouring a "market-based approach") and the German wind energy associations. In Britain a Green Alliance of British Wind Energy Association and the British chapters of Friends of the Earth, Greenpeace and WWF also supported the option in favour of the Renewables Obligation (Madlener and Fouquet, 1999; Green Alliance 1999).

Schleswig. Parallel to this, DG Energy became already more pragmatic. In May 2000, it submitted a directive³ proposal which had the potential to defer neo-liberal harmonisation, although it contained a clause that would have subjected feed-in tariffs (as well as other support schemes) to state aid regulation and thus to DG Competition. This proposal was adopted with some changes by Parliament and Council.

Beginning in 2002, the instrument held to be the most promising by the neo-liberal fraction was installed in several countries. However, it did not produce the results expected by the Commission earlier on, and more often the very opposite. This greatly weakened the case for their superior efficiency. At the same time feed-in schemes proved that key objections were in fact based on erroneous assumptions and that some of its expected weaknesses could be overcome. This and the fact that targets for 2010 will not be met seems to have inspired a rethinking of the issue in the Commission, reinforced by the arrival of a new energy commissioner (Piebalgs) in 2004. As a result, a more pragmatic approach seems to prevail, and the discussion seems to be more open than at any time since 1996. The Commission proposal for harmonisation which according to the directive could come as early as October 2005 will undoubtedly be postponed for several years.

Neo-liberal beginnings (1996-2000)

Except for coal (European Coal and Steel Community) and nuclear power (Euratom), the powers granted for the energy sector by the member states to European authorities remained very modest for a long time. Even the oil crises of the 1970s did not bring much change as member states developed their own policy of how to deal with OPEC (Matl ary, 1997). New impulses for EU powers came from the emphasis on the internal market in the 1980s, reflected in the Single European Act of 1986. This included the idea of an internal market for energy, to be characterised by greater competition and market integration. This idea was specified in the second half of the 1980s in Council and Commission proposals. In the area of electricity, the new passion for deregulation and privatisation led the European Commission to the idea of taking on some of the last, largest and most powerful public monopoly structures that still existed, i.e. the electricity suppliers. The driving force in this area was energy commissioner Cardoso e Cunha who on this issue formed an alliance with two

³ The later Directive 2001/77/EC

commissioners who carried particular weight with their commitment to deregulation and competition: Martin Bangemann from DG Industry and Leon Brittan from DG Competition (Padgett, 2001). This led to the proposal of what became Directive 96/92/EC on the internal market in electricity, a proposal that was adopted after much resistance from several member states. Many other directives were adopted in this area, with the emphasis clearly on increasing competition (Cini/McGowan, 1998; Eising and Jabko 2001).

Parallel to these developments in the field of competition and deregulation which brought the Commission new impetus and new powers, renewable energy had also been the subject of some EU interest due to its contribution to security of supply, reduction of carbon emissions and other environmental improvements, as reflected in a Council Resolution of 1986 (Council, 1986), a Council recommendation of 1988 (Council, 1988), the ALTENER programme of 1993 (Council, 1993) and several resolutions by Parliament. In 1995, the Commission White Paper “An Energy Policy for the European Union” (European Commission, 1995) summed up the positive contributions of renewable energy and announced the formulation of a strategy for renewable energy sources.

The Commission Green Paper of 1996

A first outline of such a strategy was submitted in the Commission’s 1996 Green Paper for a Community Strategy “Energy for the Future: Renewable Sources of Energy” (European Commission, 1996). It noted the fact that renewable energy sources (RES) were insufficiently exploited given their substantial potential and traced this to several factors, most importantly the insufficient internalisation of external costs of conventional energy sources, lack of confidence on the part of investors, governments and users (resulting from inertia in the face of innovative technologies) and low levels of knowledge about their potential. The variety of different national schemes and incentives was presented as another serious problem:

The current non-transparent, unstable and unpredictable framework for development and deployment of renewable energy sources and technologies resulting from the various and often rapidly changing national promotional schemes, must be considered to be a serious barrier to further market penetration. It is suggested that this ... can only be overcome by the creation of a stable and Community wide framework for renewable energy sources (ibid., 27).

Such a framework covering the political, legislative, administrative, economic and marketing aspects of renewables is held to be the top priority for economic operators. In addition, the paper states that “a strong competitive position in the global market can only be maintained and further improved as a function of a significant and growing home market” (ibid., 10). The global market for such technologies is estimated to amount to more than 1700 billion Euro by 2020, offering interesting export possibilities (ibid., 23). The key is to overcome market barriers and imperfections; the principal political incentives are market enabling measures (ibid., 14). The goal is to double the share of RES by 2010.

The 1996 Green Paper starts out with discussing the likely effects of the 1996 Electricity Directive (not yet completed by the time the paper was written). While admitting that it was difficult to know the impact of the internal market on renewables, it argues that experience of other countries with liberalisation (such as the United States) shows they can be further developed under such a regime “provided appropriate market-based instruments are introduced” (ibid., 33). It expects that the directive’s provisions on construction of new capacity requiring objective, transparent, non-discriminatory criteria will operate positively, as well as the specific reference to environmental protection and use of primary resources in the list of criteria for granting authorisations. Also, the provisions on transmission ensure that Member States may require a system operator to give priority to certain installations, including those using RES. Beyond the directive, additional liberalisation measures to be taken in the future (e.g. on access to the grid) are seen as helping renewables. In sum, liberalisation as required by the 1996 Electricity Directive is viewed quite positively in terms of its impact on RES-E development.

The Commission then presents a series of additional measures for discussion. The first item are renewable energy credits, a system that since then was realised in the EU by Britain’s Renewables Obligation in 2002 and afterwards by similar schemes in Italy, Belgium, Poland and Sweden. It was realised first (in a somewhat different form) in the US as renewable portfolio standard. At the time of publication of the Green Paper, its theoretical design already existed (Rader and Norgaard, 1996), but it had not been implemented anywhere (van Est, 1999; for an historical overview see Lauber, 2004). Usually such schemes provide for a growing quotas of RES-electricity that suppliers have to meet; for generators to be paid separately for both the physical electricity and its renewable origin; and for green certificates

of such production that can be traded on an exchange. This is what the commission viewed as a “market oriented measure”:

Such a system would promote renewables and ... prevent market distortions arising from similar measures introduced by individual Member States...[and] could play an important role in ensuring the achievement of policy goals related to renewables at least cost. As it would apply to all utilities it would be competitively neutral. ... the positive forces of the market would be brought to work in the field of renewables (European Commission 1996, 34-35).

Feed-in tariffs are not directly considered in the 1996 Green Paper. They are referred to under the heading of state aid together with a variety of subsidies and seem to fall under the “regulatory policy measures” which “as competition on the energy markets increases ... have to be phased out and replaced by more market oriented measures” (ibid., 35-36). Other proposals of the Green Paper include internalisation of external costs via a Community wide tax on all energy products⁴ and a tax exemption for RES-E, standardisation and specific support for actions to promote renewables (ALTENER, RD&D, and the use of regional, agricultural and development policies.

A striking feature of the Green Paper and also of later declarations by Energy Commissioner Christos Papoutsis is the insistence – at a time when conventional fuel prices were at historically low levels - that many RES-E technologies were already competitive then (at least for decentralised generation), and that biomass, onshore wind, small hydro and conventional geothermal needed little or no further R&D to become competitive. In the Green Paper, there is a reference to wind energy costing as little as 5 Eurocent per kWh (ibid., 13).. The source of this information may have been tenders under the British Non-Fossil Fuel Obligation which showed a rapid decline of prices between 1991 and 1995; however, many 1995 projects were never built (Connor 2004, 271).

The Commission White Paper of 1997

The White Paper for a Community Strategy and Action Plan “Energy for the Future: Renewable Sources of Energy” (European Commission 1997) repeats the belief of the Green

⁴ Since 1992 all such proposals foundered on the unanimity requirement for tax matters.

Paper that liberalisation “can form the basis for a dynamic and secure role for renewables so long as adequate market-based instruments are provided” (ibid., 15). The 1996 Electricity Directive is seen as a positive contribution in this matter. “In order to make renewables more competitive, priority should be given to ways which let the market forces function to bring down the costs for producing renewable energy as rapidly and as far as possible” (ibid., 19).

However, the White Paper – contrasting with a purely market-driven approach for which only the price resulting from competition is relevant – also raises the question of what would represent an appropriate price to be paid to generators from renewable sources. It states that this price “should at least be equal to the avoided cost of electricity on a low voltage grid of a distributor” (i.e. the wholesale price at which a municipal grid operator buys electricity from the transmission network) “plus a premium reflecting the renewables’ social and environmental benefits” (ibid.). For these benefits, reference is made to the ongoing ExternE study. Also in this context of fair conditions of access to the grid, the paper mentions the recent market success of wind energy in Denmark, Spain and Germany (i.e. feed-in tariff schemes) resulting from the price paid there by utilities to generators for sale onto the grid, adding that “any major changes that might be made in this regulatory structure should encourage and not jeopardise the appropriate development of wind energy” (ibid., 40). This could be viewed as an interesting comment on what constitutes a fair price and as such is clearly different from the “renewable energy credits” approach of the Green Paper. It was also clearly out of line with the approach of DG Competition, which in 1996 in its dealings with Germany recommended a distinct lowering of feed-in rates under the 1990 Feed-in Law, responding to a complaint by the German utilities association (Jacobsson and Lauber 2005).

On the whole the White Paper proposed ambitious goals for RES-E electricity (i.e. an increase of its share in total generation from 14.3 to 23.5 per cent; ibid., 43) and estimates that only modest financial support will be necessary to reach this goal, presumably based on the belief that many technologies were already competitive, that a Community energy tax would be forthcoming and that generalised fair access to the grid as calculated above would lead to “appropriate prices”. None of these things were at hand then, nor did they materialise since. To reach the goal of doubling all RES use, and in particular the increase from 14.3 to 23.5 per cent goal for electricity, it assumed that about €4 billion in public funds from all sources (EU, national, regional, local) would be required in the years 1998-2010, or about 300 million per year (ibid., 28-31).

Council and Parliament

The Council was in general quite supportive of the Commission's goals during this phase, including support for "market instruments" and respect of state aid provisions. However, its two resolutions in June 1997 and June 1998 (Council 1997 and 1998) were adopted before the advent of the new social democratic- Green German government in the fall of 1998. The position of the European Parliament was more critical from the beginning. Already in summer 1996, an own-initiative report demanded that independent generators should get grid access at prices which would promote RES or at least not discriminate against them (European Parliament 1996). At the end of that year, immediately after the adoption of the Electricity Directive, there was concern in Parliament – especially among the Greens - that the emphasis on liberalisation might damage the competitiveness of RES-electricity, and first steps were taken to prepare a model based on a feed-in tariff (Healy 2004). The same concern was expressed in Parliament's reaction to the Green paper (European Parliament 1997) and was reflected in its proposal for a free non-discriminatory access to the grid combined with a minimum payment by the utilities, i.e. a feed-in tariff system.

In 1998, Parliament came up with a report on a feed-in directive that it treated as legislative initiative – the Linkohr report (European Parliament 1998). This report proposes a Community-wide calculation of compensation of RES-E generators based on the average price paid by distribution system operators for fossil and nuclear electricity in the respective Member States plus an appropriate surcharge reflecting the social and ecological benefits of renewable energy sources, a proposal taken almost verbatim from the 1997 White Paper. Every member state was to have the right to choose between feed-in and the tender system (or to use both). Grid operators must accept all electricity offered by an RES-E generator located in its territory, without upper limit. The impact of the feed-in system on grid operators must be equalised by the government. For innovative forms of RES-electricity which are not yet competitive under the feed-in tariff, special funds can be set up which can invest throughout the EU.

The background for this was that the Commission in 1996 had argued vis-à-vis Germany that aid to operating costs was in principle outlawed and could only be permitted in individual cases for a limited time period and subject to a degression schedule.

DG Competition's attempt to force the issue

Despite the absence of consensus on support schemes for RES-E (i.e. support to operating costs), the Commission insisted on a harmonisation directive incorporating a system of quotas and tradeable certificates. Many member state governments were pressured to adopt such a system and to stay away from feed-in tariffs; this was combined with the promise that such a system would soon apply across the Union, so that early movers would enjoy an advantage. Germany had been advised earlier on that its feed-in tariff was subject to the state aid provisions of the Treaty and not justified in this high amount. When the new German government rejected this reasoning on both counts, the Commission attempted to force the issue – first on the level of argument, then by intervening in the case of *PreussenElektra v. Schleswag* which had come before the European Court.

The 1999 Working Paper

To clarify his position, energy commissioner Christos Papoutsis in April 1999 published the a working paper “Electricity from renewable energy sources and the internal electricity market” (European Commission 1999). This paper clearly summed up the neo-liberal assumptions and worldview. It repeated the Commission assessment that the contemporaneous existence of different support schemes was likely to result in distortions of trade and competition and that these effects were likely to grow in the coming years with an increasing market share of RES-E. It also stated that Electricity Directive 96/92/EC provided only one explicit mechanism for the favourable treatment of RES-E, i.e. article 8(3)⁵. According to this provision, member states may require the system operator, when dispatching installations, to give priority to generating installations using renewable energy sources. But even this provision – so the argument of the Working Paper - would become irrelevant sooner or later with intensifying competition, as electricity consumers are no longer captive and will shop around for other sources, so that a shrinking number of customers will have to bear growing extra costs of RES-E resulting from priority dispatch. As a result, member states would look for mechanisms where all customers contribute equally to the additional cost of supporting renewables – by a financial support mechanism. However, the 1996 Electricity Directive did

⁵ The White Paper of 1997 had taken a much more favourable view of the 1996 Directive's impact on RES-E.

not explicitly approve such support schemes; this means that these schemes are subject to the state aid provisions of the Treaty and thus subject to review by DG Competition.

The paper then makes an inventory of renewables market penetration in leading European countries and comes up with the following results (table1).

Table 1
Evolution of RES-E in selected European countries, 1990-1997

	Installed wind power capacity		Remuneration per kWh		Growth of all new RES-E*
	1990	1995	In Eurocent	evolution	
Denmark	343	1111	7.9	Stable	2.4% 1990 to 6.3% in 1996
Germany	48	1966	8.6	stable	2.2% 1994 to 2.4% in 1996
Netherlands	57	330	n.a.	n.a.	1.4% 1990 to 3.5% in 1997
Spain	7	455	6.8	n.a.	2.6% 1994 to 4.0% in 1996
Sweden	n.a.	n.a.	n.a.	n.a.	4.1% 1994 to 5.3% in 1996
UK	10	322	9.9 in 1990 4.9 in 1997	50% decrease	n.a.

* i.e. excluding large hydro

Source: Adapted from European Commission (1999), 13-14.

The above figures show the most rapid growth in Spain, followed by Germany. But the UK also makes a respectable showing – and most importantly, the figures convey the impression that this happened despite rapidly declining prices, in strong contrast to Germany. In fact, the price decrease by about 50 per cent occurred only in 1995 (Connor, 2004), the last year for which figures for installed capacity are listed. Future developments show that after 1995, the UK performance on growth remained very far behind that of Germany. Statistics up to 1997 were available at the time of the Working Paper but did not affect its conclusions since the Commission blamed the slow growth of capacity in the UK entirely on the difficulty to obtain planning permission.

The Working Paper then examines the different support schemes and comes up with the following conclusions:

- **Compatibility with Treaty rules:** Fixed feed-in tariff schemes do not permit competition between RES-generators. Nor do they permit trade at present, and it is difficult to see how they could do so in the future at least as long as they cannot meet the price reductions resulting from competition/quota based schemes existing in neighbouring countries. By contrast, quota (competition-based) schemes do not present major difficulties with regard to compatibility with EU Treaty rules.
- **Public support:** The higher prices of a feed-in tariff scheme will become a problem if continued public support for large levels of RES-electricity is to be maintained. While the scheme might be useful for ensuring low-level market take-off of RES, it may undermine support in the future due to its high prices over the medium term. In addition, since “the move from a fixed tariff approach towards one based on trade and competition is at some stage inevitable, notably when renewable generated electricity makes up a significant proportion of total national electricity consumption”, this will leave generators that entered the market on higher, guaranteed prices stranded and may lead to expensive stranded cost mechanisms (European Commission 1999, 17).
- **Investor security:** Feed-in tariffs provide a higher degree of security than quota/competition-based schemes. But problems remain over the medium term, first because at some point costs will have to be reduced by government intervention which inevitably provides uncertainty, second because they are incompatible with EU state aid and internal market rules over the medium term. This will limit investor confidence. On the other hand, quota/competition based schemes can provide a level of security that is superior to a feed-in tariff by giving a purchase price contract to a successful tenderer, along the lines of a power purchase agreement. The duration of the contract could be set by the regulatory authority.
- **Static efficiency (price reductions):** Feed-in tariffs have failed to produce price reductions for RES-electricity. The Commission sees this as being borne out by the rapidly falling compensation under different NFFO rounds (ibid., 39). By contrast, feed-in tariffs do not react flexibly to technological progress as the price reduction involves a decision by a regulatory authority. In addition, such a decision – which reduces excessive profits – “may prove to be unpopular and politically difficult to carry out, as existing producers

have a strong economic interest in ensuring continued high pricing levels payments” (ibid., 16).

- Dynamic efficiency (innovation): Fixed feed-in schemes are likely to be inferior with regard to dynamic efficiency. “As the system is not based on competition ... the incentive for innovation must, by definition, be less pronounced than under a scheme that is based on competition” (ibid., 16). This invocation of economic theory is repeated two pages later, where it is stated that quota/competition-based schemes have been the most effective “in driving down prices for renewable generated electricity and, according to economic theory, as a result of the competition, stimulating innovation” (ibid., 18). The Working Paper states that tendering schemes as practiced then in the UK and in Ireland were in fact less promising in this respect as the schemes of green certificates then expected to be introduced shortly in the Netherlands and Denmark and envisaged in Italy. The “advantage of such an approach over tendering schemes is that it results in a constant competitive pressure being exerted on generators, which can only result in improved dynamic efficiency” (ibid., 20).
- Bureaucracy, installation rates: Feed-in tariffs are seen to require little regulation or “bureaucracy”, whereas quota/competition schemes do require more regulatory and administrative arrangements. Also, fixed feed-in schemes lead to higher installation rates, but this could be due to the problems of receiving the requisite planning permission in the UK (and thus unrelated to the competition issue). Only on these two counts can the Commission see any advantage of feed-in tariffs.

At the end of this examination, the Working Paper also deals briefly with fixed premium schemes. These premiums are to be added to wholesale prices, as is the case today in Spain (Dinica and Bechberger, 2005). It concludes that this would introduce a measure of competition without a specific quota while also offering a substantial amount of security (except for the necessary downward price revisions). This competition would reduce some of the static and dynamic efficiency limitations (price reduction and technological innovation).

In the conclusion, the Working Paper makes clear that a transition to a single market in RES-E will take place in any case, since

The creation of such a single market in many other areas, notably transport, telecommunications, electricity and gas, clearly demonstrates the advantages of the

single market process in terms of increasing efficiency, improving technological innovation, and lowering price (ibid., 23).

The question of whether this process, developed to stir monopolies grown comfortable to more dynamism, can be easily transposed to an infant industry composed largely of newcomers is never raised. The shift to the single market being taken for granted, it is just a question of how it will come about – as a gradual process guided by state aid rules (something that is seen as possibly discouraging new RES-E investments due to regulatory uncertainty) or as a pro-active decision which would make sure that the different schemes are sufficiently compatible with each other to permit effective trade and thus competition and which would provide for a sufficient period of transition.

Setback for the neo-liberal approach

De Palacio's directive proposal

After the publication of the Working Paper, the Commission formulated yet another draft proposal for an RES-E directive. There was to be no harmonisation right away, but a harmonised single market scheme would definitely be installed after a period of transition of several years. In the meantime, beginning in 1999, the Commission also started to support a system of tradeable certificates on a voluntary basis known as RECS (Renewable Energy Certificate System) that could play a pioneering role for intra-Community RES-E trade.

Even so, commissioner Papoutsis was not able to overcome the intense opposition to his draft proposals by a whole variety of actors. When Loyola de Palacio became energy commissioner in 1999, she formulated one more draft going in the same direction as those of her predecessor. After yet another defeat, she shifted her stance and came up with a proposal (European Commission 2000) that left the issue of support scheme harmonisation to later determination. For the time being, different schemes were allowed to coexist, though all support schemes were expressly subjected to state aid provisions. After a period of at least five years, the Commission would make a thorough review of existing schemes. Even so, there were few doubts that at that point the Commission would recommend what it considered as market-based measures since any proposal would have to “be compatible with the principles of the internal electricity market”, according to art. 4 of the proposal; this was always the code word for quotas or tenders. Any such proposal would have to include

sufficient transitional regimes to maintain investors' confidence. Overall, this proposal was more open to experience than that of Papoutsis, but still clearly in favour of "market instruments" and the application of state aid criteria to feed-in tariffs in order to subject them to market discipline. However, the significance of this proposal was changed considerably by a decision of the Court on state aid for RES-E.

DG Competition and the instrument of state aid in the German case

At the same time, the Commission pursued its neo-liberal policy on other fronts and with other instruments, first by attempting to impose a new state aid concept and second, by introducing very specific provisions on RES-E into the Community guidelines on state aid for environmental protection (European Commission, 2001) which if need be could be enforced by the Court. The opportunity to do so had come up when the case of *PreussenElektra v. Schleswag* reached the European Court, a case in which the compatibility of the German Feed-in Law with the Treaty was at stake. The chief argument concerned state aid.

In 1990, the German government – which had tried to prevent adoption of the Feed-in Law by parliament – had notified the bill to the Commission for approval under state aid provisions. The Commission raised no objection due to the law's insignificance at that time, but announced that it would re-examine it two years later. Following a complaint by large German utilities, the Commission in 1996 expressed doubts as to whether the law continued to be compatible with Community state aid rules. Aid to operating costs was in principle outlawed and could only be permitted in individual cases for a limited time period and subject to a degression schedule. The greatest doubt regarded the calculation of the feed-in rate for wind power. Despite important technological progress and declining costs, this compensation had not changed since 1990 and thus was likely to represent overcompensation. The Commission therefore proposed a number of amendments: to reduce the rate for wind energy to 75 per cent of the average sales price (rather than 90 per cent), to limit the mechanism in time or volume, or to calculate it on the basis of avoidable costs. If the Bundestag would not amend the law, the Commission stated that it might have to take appropriate measures to bring the law in line with Community state aid rules.

The German government then proposed to make the suggested modifications in the bill which transposed the Electricity Directive into domestic law, which entered into force in April 1998. But a Bundestag majority rejected the amendment regarding the reduction of the feed-in

tariff, while adopting a system to spread the extra cost of RES-electricity to utilities and transmission system operators. In March 1998, utility PreussenElektra asked the Commission to request Germany to notify the planned law under state aid provisions. In April 1998, the Commission expressed its doubts as to whether Germany was obliged to do so, and that with regard to the rate for wind power it would continue to examine the unchanged rules and might propose appropriate measures to the German government. In July 1998, Commissioner Van Miert noted that the German legislature had not incorporated any of the Commission proposals of 1996 and that the degressive element built into the rate for wind power – average sales prices for electricity which served as reference were falling as a result of liberalisation – was insufficient. However, as important developments were taking place at Community level concerning possible proposals for harmonising the rules on the feeding in of electricity from renewable energy sources, the Commissioner refrained from proposing to his colleagues a formal decision before the German government had established a report on the operation of the Feed-in Law. It only recommended to the government to extensively discuss, in this report, the amount of aid to RES-E.

Up to this point the Commission had acted in a rather reserved manner, admonishing and suggesting but avoiding direct confrontation. This changed in 1999, after the publication of the Commission working paper on RES-E in April. Also in April, the ecological tax reform with its taxation of energy, enacted by the new red-green German government that had come to power in the fall of 1998, entered into force. Such a tax was among the measures envisioned with sympathy by the 1997 White Book on RES as being capable of reducing the price gap between prices of conventional and renewable energy sources. In Germany, it did just that, by increasing the average sales price of electricity which served as reference price for RES-E. The Commission concluded however that this constituted an increase of the feed-in rates and thus increased state aid that the German authorities had omitted to notify in violation of the Treaty. In August, it decided to open a procedure under the Treaty's state aid provisions.

In April 2000, the Bundestag adopted the Renewable Energy Sources Act (RESA, or Erneuerbare Energien-Gesetz/EEG) which put RES-E on a new basis. The red-green coalition refused to notify this act to the Commission, arguing that it did not represent state aid. Despite this claim, the act made an effort to respond to earlier Commission criticism. While setting “fixed” rates (i.e. one independent from average sales prices of electricity), it also

differentiated according to technology, set a time limit for this special rate (20 years), made compensation degressive (for new installations, feed-in rates – paid for 20 years – decline according to a pre-set schedule reflecting the learning curve) and provided for a revision every two years to reflect actual developments in this area. It also allowed utilities to benefit from this law. Nevertheless the Commission immediately responded by initiating a state aid procedure in respect of this act (Advocate General, 2000, # 16-44; European Court 2001, # 11-14).

The Commission's attempt to expand the concept of state aid

Also in 1999, the Commission joined the case of *PreussenElektra v. Schleswag* (European Court, 2001) as an intervenor. One of the two central issues was whether the Feed-in Law of 1990 as amended in 1998 was subject to rules on state aid. The Commission argued that the Feed-in Law involved state aid; as a fallback position, it maintained that

...in order to preserve the effectiveness of Articles 92 and 93 of the Treaty, read in conjunction with Article 5 (now Article 10 EC), it is necessary for the concept of State aid to be interpreted in such a way as to include support measures which, like those laid down by the amended *Stromeinspeisungsgesetz*⁶, are decided upon by the State but financed by private undertakings (European Court 2001, # 63).

In other words, it pleaded that the Court expand the concept of state aid to situations where no state resources were involved. In its judgement of March 2001, the Court rejected such an extensive interpretation. It also rejected the argument that the law amounted to a quantitative restriction on imports and thus was hindering intra-Community trade “in the current state of Community law concerning the electricity market”. It referred specifically to provisions concerning the environment and climate change and to the provision contained in the proposal for the RES-E directive on certificates of origin, presented as essential to make trade in RES-E both reliable and possible in practice.

This judgement had tremendous consequences. First and most immediately, it just about destroyed the Commission's case against the Renewable Energy Sources Act (the Commission took time to acknowledge this – it did so only in May 2002). Second, it had an

⁶ Electricity Feed-in Law (of 1990/1998)

important impact on the content of the RES-E directive proposal which was before Parliament and Council since May 2000 since it hollowed out article 4 of the proposal which stated that the rules of the Treaty, and in particular Articles 87 and 88 thereof (i.e. the state aid provisions), apply to support schemes. That passage had been strongly criticised in Parliament as it was seen as making it possible for the Commission to undercut feed-in tariff schemes after all. The judgement excluded such an approach. It also undercut the legal basis of the Community guidelines on state aid for environmental protection, promulgated in February 2001 (European Commission, 2001).

The Community guidelines on state aid for environmental protection

These guidelines contain very detailed – and quite restrictive – provisions on operating aid for renewable energy sources (articles 54 to 65). They offer four different options to grant such aid, all of them subject to authorisation by the Commission. The German Renewable Energy Sources Act (RESA) of 2000 – and even more so as amended in 2004 – would not have been able to meet these requirements, with its rates in excess of 50 Eurocent for PV power payable for 20 years. The act expressly states that feed-in rates take into account not only external costs but also the subsidies granted to conventional energy sources and the cost of starting up mass production for RES-E technology, breaking the vicious circle of high unit costs and low production volumes typical of RES-E technologies (Federal Ministry of the Environment, 2000). RESA goes further still, stating that one of the purposes of the law is to make a contribution to avoiding conflicts over fossil energy sources.

Thus the *PreussenElektra v. Schleswag* judgement reduced the RES-E provisions of the Community guidelines on state aid for environmental protection to insignificance and severely limited the significance of art. 4 of the upcoming RES-E directive which made support schemes subject to state aid regulations. By the same token, it facilitated political agreement on the new directive in Parliament and the Council as it eliminated the risk that the Commission would try to undercut feed-in tariffs by the combined use of article 4 and state aid guidelines, a prospect that had led to considerable opposition in Parliament.

De Palacio's directive proposal in the legislative process

The decision of *PreussenElektra v. Schleswag* came in the middle of the legislative process on the RES-E directive. The Explanatory Memorandum accompanying the legislative proposal of the Commission made the latter's intentions quite clear. The member states, it

states, could continue their national practices, provided they were compatible with state aid rules, i.e. Community guidelines on state aid for environmental protection (a point largely dismantled by the Court). However, sooner or later these schemes must be adapted to the framework of the internal electricity market and incorporate trade and competition. This could be done either by outright harmonisation or by allowing participation of foreign producers in those schemes and opening them up to trade and competition. The disadvantage of the second approach was that the co-existence of different schemes could lead to distortions of the market. The Commission could propose appropriate rules after presenting a report on experience gained with the different support schemes in the member states within about five years. It acknowledged that “on the basis of existing evidence, it is not appropriate, at present, to conclude that either of the existing models should form the exclusive basis of an internal market for RES-E” (European Commission 2000, 6). The directive proposal also set an overall RES-E target of 22.1 per cent.

The legislative process brought some changes to this proposal. The chief bone of contention was the regulation affecting support schemes. Some stakeholders – supported by the European Parliament – wanted a guarantee that feed-in tariffs would not be scrutinised under state aid provisions. As mentioned, this issue lost its importance by the Court’s decision in *PreussenElektra v. Schleswag*. There was a long struggle over the transition time after which a harmonisation directive, which the Commission could propose no earlier than 2005, would take effect. Finally, this was set at seven years (i.e. 2012). From the language of article 4 of the directive, it was clear such a proposal would rely on “market mechanisms”, i.e. tenders or a quota/tradeable certificates system since feed-in tariffs were assumed not to permit trade and competition and thus were not “compatible with the principles of the internal electricity market”. On the other hand, the final directive also contained a provision, not contained in the de Palacio proposal, that any such proposal should also “contribute to the achievement of the national indicative targets”. This would make sure that inefficient and ineffective support schemes would not be proposed. In September 2001, Directive 2001/77/EC (Directive 2001) was finally adopted after a second reading.

Developments since 2001

New evidence: “market mechanisms” inferior in efficiency and effectiveness

The four years after the entry into force of the directive were to be a phase of experimentation, particularly for the new “market mechanism” of quota-/tradeable certificates schemes which the Commission was sure would prove superior in efficiency. This belief (at least with regard to driving down prices) was widely shared, even by some who argued that prices were not the only – and not the decisive – factor to be taken into account (del Rio, 2005). In the EU ⁷ the first of these schemes started to operate in 2002 – the UK Renewables Obligation. It was followed by similar schemes in Belgium, Italy, Poland and Sweden (Denmark had been the first to plan such a system but dropped it again).

After a few years of operation, some provisional conclusions can be drawn. The most striking fact is that these schemes do not fulfil – so far anyhow – the expectations placed in them by the Commission in the 1996 Green Paper or the 1999 Working Paper.⁸

- As to compatibility with the Treaty, there is no more trade and competition between quota/certificate scheme countries today than there is between feed-in scheme countries, and the problems are quite similar.
- With regard to long-term public support, this is more likely to become a problem for quota/certificate schemes as they carry a much higher price tag – exactly the opposite of what the Commission expected.
- As regards investor insecurity, it is particularly prominent in the case of the “market based” instruments and is largely responsible for their comparatively higher cost. Feed-in tariffs do not suffer from the handicap expected by the Commission in this respect.
- As to static efficiency (lowering prices for RES-E), a comparison of the German feed-in tariff with the price of British Renewables Obligation certificates shows a very wide price gap between the two schemes, exactly the opposite of what the Commission expected. Wind power in Germany – where rates are highly differentiated, see the contribution by Lauber and Mez on Germany in this volume – benefits from a rate of about 7 Eurocent over 20 years (the German law was imitated in several other member states, notably France and Portugal). In the UK, total remuneration for wind plant – not limited in time – was hovering around 10 Eurocent until the end of 2004 and reached 13 Eurocent in mid-2005, despite much better wind conditions reflected in an average load factor of 27.7 per

⁷ In the US, the Texas RPS was introduced in 1999; Australia also introduced such a system earlier.

⁸ The subsequent enumeration follows the arguments of the 1999 Working Paper, listed above

cent in the UK, compared with 17.5 per cent in Germany (Lauber and Toke, 2005; Massy, 2005). Nor is the UK an isolated case: Under the Italian “market based” scheme, total compensation in recent years (before the recent price increases due to fossil fuel price increases and new carbon emission costs) ran at around 14-16 cents per kWh for the first eight years, followed by a market price of 5-6 cents. In Italy too, wind turbines have a higher load factor than in Germany (Di Nucci, 2005). Belgium shows similar results. In Poland and Sweden, experience is still extremely limited.

- As to the political difficulty to reduce compensation for RES-E generators, it did not prove politically easier to bring down prices under quota/tradeable certificate schemes than in the case of the automatic degression as under the German REFIT, introduced in 2000 and accepted without difficulty. By contrast, the absence of state intervention into the RO system is considered essential to establish long-term investor security. The issue has not been faced yet in the other quota/certificate countries.
- Dynamic efficiency and innovation. The record shows that the “competition-based” instrument of the RO did not lead to lower prices in the British wind turbine equipment market than in Germany – quite to the contrary (Butler and Neuhoff, 2004). The reason may be the much smaller size of the British turbine market. In general, dynamic innovation is not superior under quota/certificate schemes as stated in the 1999 Working Paper but rather handicapped by those schemes, as they aim to reduce overall costs and thus privilege the cheapest forms of RES-E.⁹ Also, no country with such a system has so far given rise to an RES-E equipment industry (but again this might be due to the small size of the market there, and the fact that they are latecomers internationally).

In short, if the Commission had to take a decision on future support schemes at the present time, it is hard to see how it could argue the superiority of the “market mechanisms” it once favoured, and which so far proved to be comparatively inefficient on just about all counts.

Also since 2000, feed-in tariffs underwent some innovations that were in part the result of Commission criticisms, since the German parliament in 2000 – when it adopted the Renewable Energy Sources Act – attempted to anticipate some of that criticism just in case there should be a state aid review by the Commission. Also, freed from the constraints of the state aid regime by the *PreussenElektra v. Schleswig* decision, REFIT schemes ventured on new territory. This is shown by the new schemes for photovoltaics that make PV profitable

without other subsidies. Germany introduced such a rate in 2003, with 57.4 Eurocents for 20 years for small installations. Spain followed in 2004 with 42.15 cents for the first 25 years, then 33.72 cents (Dinica and Bechberger 2005; Hirschman 2005a), and Italy in 2005 with 60 cents (Hirschman 2005b). As a result of those tariffs, the PV industry took off in Europe, creating about 60.000 jobs just in Germany between 2000 and mid-2005 and opening up the possibility of reaching the 1997 Action Plan goal of 3 GWp of installed capacity by 2010 (European Commission, 1997). During this phase of rapid growth the PV industry also developed pre-tax profit margins that DG Competition would surely have viewed as excessive – 15 per cent as industry average¹⁰ for 2004, an estimated 21 per cent for 2005, and further increases projected to reach 25 per cent in 2006 and 2007 (Rogol, 2005).

In any case, recent DG Energy thinking about support schemes seems to take a quite different direction from the one that prevailed before 2000. This became evident in the 2004 communication of the Commission on the share of renewable energy (European Commission, 2004). This communication stressed the need to commit sufficient resources to this task rather than the need to curtail subsidies, citing Germany (feed-in tariff) and Spain (premium system) as two countries that had particularly effective and efficient support schemes. Not a single member state with a quota/certificate system received a similar distinction.

With regard to harmonisation of support schemes, energy commissioner Andris Piebalgs (appointed in 2004) made it clear from the beginning that he did not think the time for it has come yet¹¹, and that he preferred national solutions (Windpower Monthly 2004) to a policy upheaval that might put the industry at risk. He stressed the importance of a thorough analysis of national schemes and experiences (Piebalgs, 2005). Clearly, the pragmatic turn initiated by de Palacio was further strengthened. The European Wind Energy Association strongly supported this position, arguing in favour of gradually increasing the compatibility of markets between countries with the same type of support mechanism in order to gather experience

⁹ Italy in July 2005 decided to support PV – by means of a feed-in tariff (Hirshman, 2005).

¹⁰ These figures refer to the global PV industry, but Europe is very well represented in this field.

¹¹ Laszlo Kovacs, first appointed by Barroso for this office, in his parliamentary confirmation hearing announced that the future lay in quota/tradeable certificate schemes. It is probably for this judgement, one full year before the evaluation of the evidence, that Parliament – in a strong position in fall 2004 – insisted on his being shifted to another portfolio (Witt 2004).

with integration. At the same time, it set out that the central conditions for harmonisation and thus full competition for renewables was the introduction of effective competition in the conventional electricity market making up 95 per cent of supply and still characterised by numerous distortions such as large subsidies to conventional players, non-internalisation of external costs¹², barriers to third party access, limited interconnection between national markets, discriminatory tariffs, lack of effective unbundling and a grid designed around large-scale generation. The main force that was left to advocate harmonisation around the tradeable certificates model was Eurelectric, with little evidence to support its argument (Massy, 2004a and 2004b, Eurelectric, 2004). As to the experiment of RECS (renewable energy credit system, set up to organise trade with certificates on a voluntary basis between a number of members of Eurelectric and to gather experience with such trade), it suffered an important setback in 2003 when the Netherlands stopped credit trading because this had led to very high level of imports subsidised by Dutch taxpayers (Lauber 2004 and 2005b).

Early policy statements by the Commission in 1996 and 1997 stressed the need to internalise external costs of (conventional) generation, e.g. by a tax. Such a tax was never adopted. But non-internalised external costs of conventional generation, as well as subsidies, continue to plague RES-E. Article 8 of the RES-E directive states that the Commission, in its reports to be formulated on the functioning of the directive and of national support schemes serving as the basis for a possible harmonisation proposal, shall consider the progress made in reflecting external costs in conventional generation and also the impact of state aid for non-renewable generation. Thanks to the ExternE project, consensus on rough estimates of those costs – still on the low side – became possible (European Commission 2003). On this basis, the European Environment Agency estimated external costs of conventional power generation in the EU-15 to amount to €43 to 72 billion annually, even while excluding most external costs of nuclear power (European Environment Agency 2004). In the meantime, DG Competition also promised to look at the external costs of nuclear power - its extremely low insurance coverage, tax advantages, insufficient preparation for waste disposal etc. (European Voice 2002a, 2002b, 2004 a and b). Such figures help to put the problem of “subsidies” for renewables into perspective. They mostly serve to establish a level playing field.

¹² In 2004, the European Environment Agency estimated external costs of conventional power generation in the EU-15 at 43-72 billion annually, even while excluding most external costs of nuclear

Targets

The issue of targets for RES-E is related to that of support schemes, since any proposal for a harmonisation framework, according to art. 4 of the directive, should “contribute to the achievement of the national indicative targets”. Now it is clear that so far, only some feed-in tariff schemes (fixed rates or fixed premiums) are likely to reach the targets of the directive. Most member states will not achieve them, and this seems to hold for the quota/certificate schemes in particular, despite their high price tags. In 2005, Commissioner Piebalgs promised to launch legal proceedings against five member states that were not monitoring their targets (Environment Watch Europe, 2005a). In the meantime, Parliament pushed for a higher target for 2020 – about 33 per cent for RES-E (Environment Watch Europe, 2005b).

Conclusion

In the second half of the 1990s, Commission policy on RES-E support schemes was single-mindedly set on neo-liberal instruments which – at least in the form adopted later – appear in hindsight as inappropriate to implement those very goals. Ideological belief seemed even disdainful of empirical verification, notwithstanding the fact that the neo-liberal approach invoked had shown its success with regard to mature monopolies and not an infant industry. At least initially, these beliefs were based on over-optimistic assumptions with regard to a “near-competitive” status of RES-E technologies and the feasibility of some Commission plans that would undoubtedly have assisted RES-E development but never became reality, such as the old plan for an energy tax internalising external costs of conventional generation.

When the Commission tried to impose its view that feed-in tariffs qualified as state aid even if not supported by state resources, it lost its case; this was a major setback for its neo-liberal approach. As a result both of the Court decision in *PreussenElektra v. Schleswag* and some modifications made by Parliament, directive 2001/77/EC became much less neo-liberal than originally intended. Its chief merit may consist in having set national targets, something that inspired many countries to take supportive measures in this field, and to have opened a process in which support schemes have to compete not in terms of ideology, but of results.

The situation in October 2005 is somewhat paradoxical. Directive 2001/77/EC charges the Commission with submitting a report on the experience with national support schemes, accompanied if necessary by a proposal for a Community framework for such schemes. On the level of argument, it seems clear that the “market based” instruments are in trouble. Up to now, they did not live up to their promise; they are both more expensive and less effective (in terms of leading to installed capacity) than the better feed-in tariffs. On the other hand, since the 2004 European elections, there does not seem to be a political majority for such tariffs in either Parliament or Commission (Köpke 2005, citing Mechtild Rothe). As a result, no proposal will come forward, which means that successful feed-in tariffs can continue to operate if only they enjoy domestic support. At the same time, there is another chance for other system to prove their mettle.

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