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Shelley Welton was a research associate at *Notre Europe* during the summer of 2006, where she studied EU renewable energy policy. Before joining the *Notre Europe* office in Paris, she co-authored the *Notre Europe* study ***"Sense and Flexibility: Striking a balance between sovereignty and harmonisation in the implementation of the EU ETS"*** as part of a Columbia University graduate workshop.

Competition, Cooperation, Solidarity

Collective Power:

Enhanced Cooperation as the Driver of a Common Tradable Green Certificate Market

Current EU support for renewable energy suffers from fragmented, uncoordinated national policies. A number of European countries have gained experience with domestic Tradable Green Certificate (TGC) markets and could benefit considerably from merging these markets into a single scheme. This paper proposes enhanced cooperation as a mechanism to allow precursor to a fully harmonised EU renewable energy policy. It begins by describing the state of renewable energy support in the EU and gives an overview of the current usage of tradable green certificates. It then discusses the benefits of an enlarged TGC market and explains why enhanced cooperation should be used to create it, before examining the legal and technical feasibility of such a market. Finally, it discusses the political prospects of creating an enhanced cooperation agreement for a common TGC market.

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Foreword

Roofs of entire German suburbs covered with solar panels, but absent from most Italian buildings; wind-turbines in densely populated regions of Denmark encouraged more than in more isolated regions of France with more wind… the gains to be made from coordinating energy policies across borders are most vividly illustrated by the renewable energy sector.

At first glance, Sheldon Welton thus states the obvious with this paper: producing renewable electricity where it economically most efficient, and allowing consumers to buy the 'green' electricity thus produced across borders, makes sense. With the complete opening of electricity markets, the message is timely. More than free choice of producers will be required, however, to make this vision happen, as most renewable energy sources still require some form of incentive to develop. 'Tradable green certificates', adopted in several EU countries, can both help the development of renewable electricity and act as a common currency to exchange: with TGC markets, unlike electricity, consumers do not have to be physically

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connected to producers, and certificates do not have to be sold / used at the time of generation. This enables competition and increased market efficiency. TGCs can be used by Member states (especially the new ones) to meet renewable energy targets and can serve as a mechanism to trade renewable benefits internationally.

But Sheldon Welton's argument of course goes beyond advocating a particular form of encouragement of renewable sources of energy for the production of electricity. In the broader context of debates on a European Energy Policy, she demonstrates that an Enhanced Cooperation Agreement designed to bring together EU member states specifically around a shared TGC market is economically sensible and politically and legally realistic. As she concludes however, "it requires that certain countries sacrifice domestic RES-E resources in order to promote efficient RES-E production throughout the ECA participating states."

This provides a vehicle for applying enhanced cooperation in a useful manner, unlikely to trigger the opposition of non-participating member states, and offering the prospect for enlarging the scheme to more member states, as they see the benefits of the system. The same logic, some argue, could be applied to other energy issues, [standardization of Guarantees of Origin for Renewable Energy, creation of a common RPS…I don't know quite what to add outside the renewable energy field though],, as stepping-stones towards a more ambitious and integrated EU energy policy. The scope proposed in this study might, in this respect, seem too narrow. The paper indicates that it might be preferable to have realistic small 'bites' at coordinating national energy policies in this fashion, than pursuing grander schemes that are more difficult to swallow. However, it should not be perceived as an argument for a 'micro-neo-functionalist' approach to integration. It is intended first and foremost as a case study, investigating the benefits and feasibility of such a scheme, coherent with Notre Europe's current lines of study on energy policy and on enhanced cooperation.

However tackled, even in the pragmatic fashion proposed, further energy coordination will require a mental shift. In this case, in the words of the author, member states will need to focus no longer "on the amount of domestic renewable energy to finance," but "on how much RES-E production participants are willing to finance regardless of whether or not the production actually occurs in Sweden or some other country." A vision perhaps of Europe's future that is attainable.

Stephen Boucher

Collective Power: Enhanced Cooperation as the Driver of a Common Tradable Green Certificate Market

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Commonly Used Acronyms

ECA	enhanced cooperation Agreement
EU	European Union
GoO	Guarantee of origin
FIT	Feed-in tariff
MWh	Megawatt-hour
REC	Renewable energy credit
RES-E	Renewable energy source of electricity
RPS	Renewable Portfolio Standard
TGC	Tradable Green Certificate

1. Introduction: European Renewable Energy Policy

1.1. Renewable Energy Support in the EU

The promotion of energy from renewable sources has become a widely recognised, critical policy objective. Not only does development of renewable energy sources displace fossil fuel generation and mitigate climate change, it also diversifies domestic energy supplies, leads to decreased dependence on energy sources from politically unstable regions, stimulates local economies, improves long-term electricity price stability, reduces local and regional air pollution, and enhances Europe's competitive edge in the burgeoning international renewable energy market.[1]

Recognising the host of benefits linked to renewable energy promotion, the European Union has actively been seeking effective ways to help renewable energy sources of electricity (RES-E) penetrate the electricity generation market. The current Community renewable energy policy is

1 Jansen, J., K. Gialoglou and C. Egenhofer (2005)

guided by Commission Directive 2001/77/EC on renewable energy sources, which sets European Union global targets of 12 % of gross national energy consumption from renewable energy sources and 22,1 % of electricity produced by renewable energy sources by 2010.[2] These global targets have been sub-divided into national, non-mandatory indicative targets for 2010. However, a 2007 Commission Communication confirms that the EU is not on target to meet its goal, and will fall approximately 2 % short of the target based on the continuation of current policies.[3]

The recent Presidency Conclusions of the European Council endorsed a binding target of 20 % of EU energy needs met through renewables by the year 2020. The Council envisions that this binding target will be subdivided among Member States, allowing individual countries to determine their own mixes of sector-specific policies.[4]

Overall, the Commission has limited plans to push for a more coordinated strategy in order to achieve targets. In fact, the Commission's 2005 assessment of the support for renewable energy sources found that over 60 different State aid schemes for renewable energy were approved from 2001 to 2004, making harmonisation "very difficult to achieve in the short term."[5] There is a very long time frame allowed for adjustment to a fully harmonised renewable energy policy: after the creation of a harmonised renewable energy support system, member states will be allowed a transition period of seven years to move from their national policies to the EU policy.[6]

2 European Parliament and Council (2001)
3 European Commission (2007)
4 European Union Council Conclusions (2007)
5 European Commission (2005)
6 European Parliament and Council (2001)

Instead of Union-wide harmonisation, **the Commission encourages intensified cooperation between member states in order to develop stronger support systems, leading to "sub-harmonisation" as a stepping stone to full harmonisation.**[7]

1.2. Current national policies for support of RES-E

Current national support mechanisms for renewable energy sources of electricity (RES-E, summarised in Table 1 below) can be grouped into four categories: green certificate systems, feed-in tariffs (FIT), tendering, and tax incentives.[8] These four mechanisms are complementary to Research and Development (R&D) programmes, which also exist in most member states, in that they focus on technology deployment, and can help inform the goals of an R&D programme that advances the state of existing technologies and creates new ones.[9]

Of these four national support mechanisms, FIT and tradable green certificate (TGC) schemes have grown to be the most popular support mechanisms, and are also found to be the most effective in RES-E market stimulation.[10] FITs provide a fixed level of support, differentiated by technology, to RES-E producers. Alternately, a TGC market facilitates 'trade in greenness', by creating demand and supply for green certificates that are awarded to producers of RES-E on the basis of megawatt hours (MWh) of green electricity produced.[11] These two policy measures serve somewhat different ends: FITs work much better as targeted measures that allow less mature renewable technologies to compete only against themselves.[12] On the other hand, because certificate markets achieve policy

7 Ibid
8 European Commission (2005)
9 Sagar, A.D. and B. Van der Zwaan (2006)
10 Jansen, J., K. Gialoglou and C. Egenhofer (2005)
11 Schaeffer, G. J. et al (2000)
12 Middtun, A. and K. Gautesan (2006)

goals at lower costs but only serve to stimulate the most cost-competitive renewable technologies, they function best for supporting technologies that are already mature and need only an extra boost to ultimately become competitive with conventional technology choices.[13] Certificates hold the additional advantage of separating environmental benefits from physical electricity flow, thereby rendering them insensitive to transmission congestion or insufficient interconnection.[14]

Table 1 - Support mechanisms for RES-E	
Tradable Green Certificates (TGC)	RES-E is sold at the conventional market price. In order to finance the additional cost of producing green electricity, and to ensure that it is generated in sufficient quantities, all suppliers or consumers are obliged to purchase a certain number of green certificates from RES-E producers according to a fixed percentage (quota) of their total electricity consumption/generation.
Feed-in tariffs (FIT)	FITs set a price per unit of electricity (normally set for seven years) that a utility or supplier has to pay for renewable electricity from private generators. The government regulates the tariff rate. These exist in most of the member states.
Tendering	The State issues a series of invitations to tender for the supply of RES-E, which will be sold at market price. The additional cost is passed on to the final consumer in the form of a special tax. These exist only in Ireland and France.
Tax incentives	Reduction or exemption of tax payment. These are used exclusively in Malta and Finland.

13 Ibid
14 Verhaegen, K, L. Meeus, and R. Belmans (2006)

2. Tradable Green Certificates and the benefits of greater cooperation

2.1. The Choice of TGCs

While FITs provide financial security to producers of more experimental sources of RES-E, obligations-based TGC markets allow for the most cost-effective achievement of renewable energy targets. Obligations-based TGC markets create demand for TGCs by requiring suppliers, distributors, or consumers of electricity to meet some percentage of their electricity needs from RES-E sources. This obligation is often referred to as an RPS, or Renewable Portfolio Standard. Governments benefit from an obligations-based TGC scheme because TGC schemes provide far more certainty in achieving specific national targets than alternative support mechanisms or voluntary TGC markets.[15],[16] However, trade of TGC for the purposes of meeting a national RPS is currently limited to domestic markets—while

15 Jansen, J., K. Gialoglou and C. Egenhofer (2005)
16 Voogt, M.H. and M.A. Uyterlinde (2006)

voluntary trade occurs across borders, obligations can only be fulfilled domestically.[17]

Obligation-based TGC markets are based upon the fundamental precept that using a market mechanism to stimulate renewable energy production will enhance competitiveness and allow RES-E goals to be met at the lowest possible cost. The choice to use a TGC scheme instead of an alternate support mechanism has consequences; specifically, placing a focus on price-competitiveness means that less developed renewable technologies are unable to compete in a TGC market.[18] However, policy choices are not either/or—countries can blend and merge a range of policy options to create more robust yet efficient renewables support.[19] There also exists the possibility, within a TGC market, of separating technology into 'bands' in order to offer differentiated levels of support.[20] This paper does not presuppose the suitability of TGCs over FITs for all member states, but merely articulates the gains that could be made in greater coordination between those countries that have opted for or plan to opt for obligation-based TGC schemes.

TGC markets function optimally when they include a large number of producers and obliged actors, thereby allowing competition and technology optimisation to drive down market prices for certificates and push RES-E towards open market competitiveness. Therefore, expanding domestic TGC markets is an RES-E policy area in which great gains could be made through countries coordinating their national policies.

17 A note on vocabulary : tradable green certificates (TGCs) are alternately referred to as tradable renewable energy certificates (TRECs). Traditionally, TGCs have been used only to meet domestic RPS quotas ; however, as this paper envisions linking separate TGC schemes, it maintains the use of the phrase « TGC » to describe the certificates that might be use in an international trading market.
18 Middtun, A. and K. Gautesan (2006)
19 Van der Linden al (2005)
20 Bertoldi et al (2005)

2.2. The Current State of domestic TGC markets in the EU

Obligations-based TGC markets are functioning in five EU member states: the United Kingdom, Sweden, Italy, Belgium (Flanders, Brussels, and Wallonia), Poland, and Romania. Moreover, several member states have been seriously considering TGC schemes (e.g. Hungary and Denmark) or have tried them for a period of time (including Austria from 2001 to 2003 and the Netherlands which had in place a voluntary market from 2001 to 2004 –see Table 2). Sweden and Norway have been in negotiations over a joint market for the past few years, although its inception has been postponed several times, [21] most recently because Norway feared that it would be expensive for its utilities and customers to make such a large shift in renewable policy.[22]

Provided below are brief descriptions of operating and planned schemes; these schemes are described with much greater detail in a number of recent papers and reports. [23] Many of these countries have recognised that major gains in efficiency and effectiveness could be made through joining together TGC markets into a single scheme. For example, "the Swedish Government has decided that the benefits of the electricity certificate system will be most clearly felt when international trading of such certificates is brought about, and that Sweden should actively work towards establishment of a larger market for electricity certificates, starting with Nordic countries."[24] Given the recent failure to push through a common Norway-Sweden market, perhaps it is time for Sweden to turn towards the rest of Europe as potential partners in this venture.

21 Jansen, J,. K. Gialoglou and C. Egenhofer (2005)
22 Norwegian Ministry of Petroleum and Energy (2006)
23 Van der Linden, N.H. et al 2005, Lorenzoni, A (2003), Project Finance Magazine (2005), UK Department of Trade and Industry (2006c), Dinica, V. and M. J. Arentsen (2003), Neilsen, L. and T. Jeppesen (2003), Madlener, R. and J. Drillisch (2002)
24 Swedish National Board of Trade (2005)

Table 2 - Current member state TGC Markets

Sweden

Sweden's TGC market, to date, has been the sole market in Europe to place an obligation on consumers to obtain a percentage of renewable energy. In practice, however, suppliers handle this obligation and pass the costs on to consumers through a separate surcharge, except in the case of a few large electricity consumers who handle their obligation directly. Because Sweden's market is small, existing plants are included in Sweden's scheme, and have profited considerably from this inclusion. Sweden has recently been considering extending its market to include Norway, but this will require a political decision about whether Swedes are willing to support RES-E in Norway in order to have a more liquid, stable market (van der Linden et al 2005). In 2006, Sweden has proposed a new act which would transfer the quota obligation to suppliers, extend the certificate system until 2030, and enforce a fifteen year maximum participation period in the programme for RES-E producers (Swedish Ministry of Sustainable Development 2006).

Italy

Italy has designed a TGC market that is mandatory for all producers and importers of electricity. The market intentionally targets only *new* RES-E sources by limiting participation to new power generators after April 1, 1999 and allows these new plants to receive certificates for eight years, after which point they are no longer eligible. TGCs in the market expire after one year, thus eliminating the possibility of borrowing or banking of certificates. One other noteworthy feature of the Italian market is that the governing body, the National Power Exchange, can sell and purchase TGCs as well as issue virtual TGCs in order to control the market price. While Italy's plan to target new sources is innovative, the scheme has received criticism for the limited ambition of its targets, which do not keep pace with projected increase in demand (Lorenzoni 2003).

UK

The UK has introduced a 'Renewables Obligation' that requires suppliers of electricity to obtain an increasing percentage of their electricity from RES-E. This obligation can be met through purchasing Renewable Obligation Credits (ROCs, synonymous to TGCs), or by paying a 'buy-out' payment per MWh which is then recycled back to RES-E producers (Van der Linden et al 2005). The UK has recently given its market greater stability and boosted investors' confidence by ensuring that the Renewables Obligation will exist through 2026-2027 and that the level of the Obligation will always stay above the level of renewables actually installed. They are also considering «banding» technologies to provide differentiated levels of support to RES-E sources at diffrernt levels of cost-competitiveness (UK Department of Trade and Industry 2006a).

Belgium

Belgium has a total of four different TGC schemes functioning—one in each region and a separate, federal scheme for Belgian green power in the North Sea. These schemes differ somewhat in design—some include only RES-E, others integrate CHP. All of these systems place obligations on suppliers, but have different definitions of what constitutes acceptable RES-E for quota obligations (Verbruggen 2004). There has been some recent movement towards internal harmonisation of the certificate schemes, and further scheme integration is being demanded despite the technical complications it would confront (Verhaegen et al 2006).

Poland

Poland's TGC scheme came into effect in October of 2005, although trade through the Power Exchange did not begin until late 2006 due to some complications surrounding value-added taxation concerns and certificate trade. Some certificates were traded bilaterally earlier in the programme. The system is similar to many others in that it places a burden on electricity suppliers to meet a certain percentage obligation of RES-E; this obligation rises from 3,1% in 2005 to 9% in 2010 (Project Finance Magazine 2005).

Romania

Romania also implemented a TGC scheme in 2005. Romania's scheme requires suppliers to meet a rising percentage of their total supply from RES-E, growing from ,7% in 2005 to 8,3% in 2012. Extra certificates can be banked to the next year. Trading occurs both bilaterally and through a central market; however, minimum and maximum price levels have been established at 24 Euros/MWh and 42 Euros/MWh, respectively (Sandulescu 2005 and Apostal 2006).

Experiments with TGC Markets

Austria

In 2001, Austria began experimentation with a TGC system used specifically for small-scale hydropower. This system placed an obligation on electricity suppliers or large consumers to procure 8 % of their purchases from hydropower with a capacity of under 10 MW (Madlener and Drillisch 2002). However, Austria abolished this system in 2003 when it switched to a FIT system. (Energy Economics Group at Vienna University of Technology et al 2004)

Netherlands

The Netherlands experimented with a voluntary green certificate system beginning in 2001; this replaced a green label system from the 1990s (Dinica and Arentsen 2003). While the scheme was voluntary, it was not without incentives: customers who elected to purchase TGCs were exempt from the energy tax normally levied on electricity consumption. First, the Dutch limited the scheme only to domestic producers, worried that cheap imports might under-stimulate internal production. However, after the RES-E directive set an ambitious target for the Netherlands, the country decided to allow imports of RES-E although choosing to exclude hydropower entirely due to its cost-competitiveness (Dinica and Aretsen 2003). Ultimately, though, this left the Dutch frustrated that they were supporting primarily external producers, and they have since switched entirely to a feed-in scheme (Bertoldi et al 2005). The Dutch have received criticism for relying entirely on a voluntary scheme in the face of ambitious RES-E targets and strong popular support for renewable energy (Dinica and Aretsen 2003).

Anticipated TGC Markets

Denmark

Denmark has designed a TGC market that was scheduled to enter into force in 2004 for wind, geothermal, biomass, small hydropower, and solar PV. However, complications postponed the market originally until 2005, and it has yet to enter into force. One of the primary complications noted is the projected small size of the green market that would have been created by a domestic TGC scheme (European Renewable Energy Council 2004).

Hungary

There are reports that Hungary also plans to introduce a system of tradable green certificates, but that officials are waiting until the market for renewable electricity reaches "a critical mass of 300-350 MW" (Austrian Energy Agency 2006)).

2.3 Political difficulties mask efficiency and stability gains

Political Difficulties of an EU-wide TGC Market

In the long term, the creation of an EU-wide TGC market is promising; however, in the shorter-term full market harmonisation is not advised or planned by the Commission. The Commission has expressed a long-term goal of a harmonised system of renewable energy support, and it has been generally suggested in both academic literature and political debate that the likely unified support scheme would include a TGC system.[25],[26]

In a 2006 article on green electricity markets, the Centre for International Climate and Environmental Research-Oslo suggested that a common support framework based on a TGC scheme would be very difficult to achieve politically in the short term, even though such a scheme could take advantage of the cost differences that exist between EU countries.[27] Given this political reality, a 2003 *Energy Policy* article that presents an overview of European schemes suggested although prospects for a common EU

25 Del Rio, P. (2005)
26 However, a unified scheme would not necessarily consist of a sole support mechanism, but more likely a suite of policies, as a combination of policies theoretically and in past experience proves far more successful than a single policy.
27 Gan, L. et al (2006)

market in TGCs are not promising, national attempts might be merged to create common market rules that could eventually lead to the development of an international TGC market. [28] Similarly, a 2000 examination of TGC scheme design options envisioned that one path to an international market might be a "harmonisation of methods and institutions for TGC and targets within a few EU-countries, forming a 'trading bubble'."[29]

Not only would an entirely harmonised TGC market be politically difficult, it would be inadvisable at the current time due to the divergence in member state policies. The European Wind Energy Association noted in its 2005 report that incentive schemes for RES-E support must fit within a relevant national / regional context.[30] To force a dramatic shift in support frameworks of all member states could significantly harm the renewables market, and national systems need to be tested in multi-lateral cross border trade before being embraced by the Union as a whole.[31]

Efficiency and stability gains offered by an expanded, multi-lateral TGC market

Right now, domestic TGC markets in Europe suffer from inefficiency because of a small number of participants and limited stability of energy policies.[32] In spite of the fact that the EU as a whole is unprepared for a common TGC market, the development of a common market among those countries that are well-positioned to use the TGC mechanism would lead to major efficiency and stability gains for the RES-E markets of participating countries.

A larger TGC market would allow national governments and energy suppliers to meet their national quotas and RES-E obligations more efficiently. An enlarged market encourages renewable energy producers to optimise the type and location of RES-E facilities, thereby lowering cer

28 Neilsen, L. and T. Jeppensen (2003)
29 Schaeffer, G.J. et al (2000)
30 European Wind Energy Association (2005)
31 European Renewable Energy Council
32 Van der Linden, N.H. et al (2005)

tificate prices and the costs of meeting RES-E targets.[33] Obliged actors in countries with poor RES-E resources would be able to purchase TGCs from countries where RES-E resource potential is higher and therefore costs are lower. In a 2006 study of "Cost effects of international trade in meeting EU renewable electricity targets," researchers from the Energy Research Centre of the Netherlands developed a model that quantifies the costs of RES-E targets and the impacts that an international trading scheme would have on these costs. Overall, the authors find that **an EU-wide trading scheme could lower the cost of achieving RES-E targets by 12 %; some member states could lower costs by up to 47 %.**[34] This study identified likely importers and exporters of TGCs and quantified the benefits of trade accruing to each country in meeting their 2010 indicative target, under a common TGC market:

Deployment of RES-E by country in 2010 with a trading system implement, for the target division in the EU directive on promotion of RES-E

	Target calculated from the directive (TWh)	Calculated actual deployment (TWh)	Trade flows (TWh)^	Benefits of trade (million Euro)
Austria	55.2	52.6	2.5	16
Belgium	6.3	4.6	1.7	170
Denmark	12.9	25.9	-13.0	130
Finland	30.2	38.9	-8.6	247
France	112.9	119.5	-6.6	111
Germany	76.7	66.7	9.9	506
Greece	14.6	18.5	-3.9	52
Ireland	4.5	10.1	-5.6	154
Italy	89.8	91.2	-1.4	8
Luxembourg	0.5	0.5	0.0	1

33 Del Rio, P. (2005)
34 Voogt, M.H. and M.A. Uyterlinde (2006)

	Target calculated from the directive (TWh)	Calculated actual deployment (TWh)	Trade flows (TWh)[A]	Benefits of trade (million Euro)
Netherlands	11.9	10.3	1.6	25
Portugal	24.2	21.3	2.9	13
Spain	75.2	51.2	24.0	706
Sweden	97.5	99.4	-1.8	16
United Kingdom	50.0	51.5	-1.5	13

[A]: Negative number indicates export.
Source: Voogt and Uyterlinde 2006

These results suggest that **in a larger TGC market, all participating countries would stand to gain, even those that are predicted to be net importers of TGCs**.

A larger TGC market would also create a more stable market environment. The instability of current domestic market prices leads to lowered investor confidence, and this is unlikely to change as long as markets exist on a national level, as national markets will not grow large enough to create real price stability.[35] An international market would create much **more stable certificate prices**. Because the market potential is much larger in an international market, any shortages of TGCs in one country could be offset by a year of large production in another.[36] This market stability would be beneficial to all investors, in all participating countries.

Another advantage to participating in a common market is the **political capital** that forward-thinking provides. As the EU has expressed the ultimate intent of full harmonisation, early action by 'first-movers' would give these countries market experience and considerable oversight of the market design. Finally, it has been suggested that a larger market might facilitate quota-setting for TGC schemes; any problems in fulfilling a national quota could be minimised through importing TGCs, while surplus TGCs could be exported. Thus, a larger market could **facilitate not only the fulfilment of national quotas, but also the setting of these quotas**.[37]

Given the clear gains in market efficiency and stability offered by an expanded market, but the hesitance at the Union level of fully harmonising policies, **the question becomes: how can we encourage those member states ready for harmonisation to proceed with the creation of a common TGC market that could ultimately be expanded to the EU as a whole?**

2.4. Enhanced cooperation and a TGC market: a perfect match?

Enhanced cooperation is a little-used legal framework established by the Treaty of Amsterdam (1997) and modified by the Treaty of Nice (2001), which allows a minimum of eight member states to establish a cooperative arrangement among themselves in the case that a policy objective cannot, in a reasonable time frame, be adopted by the Union as a whole.[38] The possibilities for enhanced cooperation have broadened recently, as illustrated by the European Convention Secretariat's 2003 observation that "the mechanism is… no longer seen solely as a substitute for unanimity, but also as a tool that makes it possible to take account of objective differences, even if they are only temporary."[39]

Enhanced cooperation provides an optimal framework for the stepping stone of 'sub-harmonisation' that the Commission has envisioned for

35 Verhaegen, K, L. Meeus, R. Belmans (2006)
36 Nielsen, L. and T. Jeppensen (2003)
37 Del Rio, P. (2005)
38 European Communities (2001)
39 The Secretariat of the European Convention (2003)

renewable support mechanisms. While only the Schengen Accord and the Common Monetary Policy exist as concrete examples of Enhanced Cooperation Agreements (ECAs), ECAs have the potential to be "the main engine of future European integration."[40] In other words, ECAs might allow forward-thinking member states to act as a sort of laboratory to test new, common policies under the administration of the European Union. ECAs are a pragmatic method for driving policy forward, given the heterogeneity of EU member states and the plethora of national policy approaches to common European issues.[41]

There are a number of ways that enhanced cooperation could be used to move the EU towards more harmonised renewable energy policies. This paper focuses on the possibility of linking existing domestic TGC schemes to create a single, larger multi-lateral market. Most ambitiously, enhanced cooperation could be used to create a multi-state RPS. This would allow for great efficiency gains in meeting RES-E targets, but would require considerable negotiation to establish mechanisms ensuring compliance. Some academics and industry groups suggest that a related area for cooperation could be the creation of a harmonised system for Guarantees of Origin (GoO), which all member states are required to furnish to RES-E suppliers upon request but which currently lack the uniformity necessary to facilitate their use in trading.[42], [43] ECN Senior Researcher Jaap Jansen recommends "a multi-member state renewable portfolio standard (a common RES-E quota obligation) aiming at achieving the common standard at lowest overall costs to the member states participating in such a scheme", adding that "in order to ensure market efficiency, such a scheme should be backed up inter-linked, fully compatible, reliable national systems of property rights to guarantees of origin with comprehensive coverage of all (at least renewable) electricity consumed in the system areas, certifying that the underlying amount of electricity has the (renewable) generation attributes, stated by these guarantees".[44]

While recognising that GoO harmonisation is an important next step towards a more coherent EU-wide policy, and that a multi-member state RPS is a promising possibility for further member state cooperation in renewable energy, this paper focuses on a common TGC system. This is because of the increasing experimentation with domestic TGC systems and the political will expressed by many member states to expand into an international scheme.

Because the Commission is planning for eventual policy harmonisation for RES-E support, the EU would clearly benefit from having any major TGC market develop within a framework that allows for the eventual adoption by the entire Union. However, not all countries are prepared to participate in a common TGC market at this point in time due to the heterogeneity of RES-E support schemes and resources. Therefore, we are left with the precise situation for which enhanced cooperation was envisioned: a number of member states are ready to move forward on an issue that would enhance the goals of European integration, yet complete political consensus is not possible and not even desirable at the current time.[45]

Although all countries are not poised for participation, it will be beneficial to the entire EU to have a common TGC market form within the framework of the European Union, so as to allow for oversight and plan for eventual

40 Baldwin et al (2001)
41 Ibid
42 For more on this topic, see van der Linden, N.H. et al (2004), RECS International, SETREC/GO (2003)
43 One model for creating a standardised system for GoO already exists in the European Energy Certificate System, which has facilitated some international trading of certificates since 2003. See http://www.aib-net.org/portal/page/portal/AIB_HOME/AIB_EUR.

44 Private correspondence, 20 September 2006. One of the merits of such an overarching GoO system is that it allows the inclusion of member states co-operating in the joint RPS 'bubble', but also "countries with other support mechanisms, such as feed-in-tariffs as long as the latter countries have tracking styems that are fully compatible, comprehensive and reliable."
45 Bordignon, M and S. Brusco (2004)

expansion. As expressed in the year 2000, when such a development was much more hypothetical: **"If formal trade between a few countries happens, then the rules and standards for international trade set by these few countries will strongly influence the eventual international regulatory framework for TGC-trading."**[46] Given the strong influence that any 'sub-harmonisation' of TGC markets is likely to have on an eventual European market, the use of an ECA, approved and overseen by the EU but administered by the participants, seems the ideal framework in which a pan-European obligations-based TGC scheme should be executed.

46 Schaeffer, G.J. et al (2000)

3. Can it be done? Feasibility considerations

There are two major considerations in terms of feasibility: the legal feasibility of using an Enhanced Cooperation Agreement (ECA) to create a common market, and the technical feasibility of merging TGC markets.

3.1. Employing Enhanced Cooperation—Legal Feasibility

The Provisions for enhanced cooperation, as amended by the Treaty of Nice, contain a number of stipulations. As of 2005, the Swedish Board of Trade reported that the legal aspects of establishing enlarged certificate markets can only be discussed in general terms, as "the subject has not… been subjected to legal scrutiny."[47] The provisions of enhanced cooperation, along with a discussion of their relevance and conditions in the case of an ECA TGC, are therefore discussed below in the general terms available.

47 Swedish Board of Trade (2005)

Per Title VII, Article 43 of the Treaty on European Union, an acceptable enhanced cooperation agreement:[48]

• is aimed at furthering the objectives of the Union and of the Community, at protecting and serving their interests and at reinforcing their process of integration;

This first condition is certainly met by a TGC ECA, as it could create the 'sub-harmonisation' that the Commission has called for on the road to full harmonisation of RES-E support mechanisms.

• *respects the said treaties and the single institutional framework of the Union;*

• *respects the* acquis communautaire *and the measures adopted under the other provisions of the said treaties;*

• *remains within the limits of the powers of the Union or of the Community, and does not concern the areas which fall within the exclusive competence of the Community;*

These three conditions should not be contentious for a TGC ECA, as the choice of RES-E support mechanisms is currently a domain of the member states and the Commission has already approved the state-aid schemes of the member states currently using RPS/ TGC systems.

• does not undermine the internal market as defined in Article 14(2) of the Treaty establishing the European Community, or the economic and social cohesion established in accordance with Title XVII of that Treaty;

• does not constitute a barrier to or discrimination in trade between member states and does not distort competition between them;

These two conditions will be the most difficult to meet in forming a TGC ECA. For instance, one Member of Parliament recently raised concerns to the Commission over whether the full opening of the internal market in July 2007 will be compatible with national support systems for renewable energy. The MEP cited a 2001 case in which the European Court of Justice ruled that the obligation to purchase domestic green electricity "resulted in a limitation of outlets for suppliers from other member states."[49] While a common TGC market would in some ways eliminate this legal hurdle between participating countries, it would not solve this limitation for non-participants. Countries participating in the agreement would be able to sell green certificates trans-nationally and thus support RES-E in any participating country, but RES-E suppliers in non-participating countries would be ineligible to receive and sell certificates.

The legal acceptability of this arrangement still needs confirmation. However, a TGC ECA would at least improve upon the entirely fragmented nature of national RES-E markets that currently exist, moving towards less distortionary RES-E support policies by opening up participating countries' markets to each other.

The Swedish Board of Trade, in its analysis of the legal impacts of an enlarged TGC market, found a few possible legal impediments.[50] First, because Sweden has a relatively strict definition of RES-E, they believe that it may be hard to justify departures from the definitions of the EU RES-E directive in the case of scheme enlargement.[51] This suggests that Sweden and all other participating countries would have to be willing to amend their RES-E definitions to harmonise them with the RES-E directive in order to form a larger TGC market. As the Commission is charged with approving all state aid schemes for RES-E, it is also believed that a change in state support for RES-E would require review by the Commission to determine if the new scheme complies sufficiently with the requirements of the open

48 European Communities (2002)

49 Caspary, D. (2006)

50 While this analysis focused specifically on the possibility of expanding the market to include Norway, it also stated that the market would have to be available for participation of other countries and planned for this eventuality. Its legal analysis should be relevant in the larger context of enhanced cooperation as well as in the narrower context of a bi-lateral market.

51 Swedish Board of Trade (2005)

market.[52] The Swedish Board of Trade, however, does believe that an expanded market is legally permissible, given that any such proposal is quickly referred to the Commission for approval and that new notification is given to the Commission if the scheme changes the conditions for state support.[53]

• *involves a minimum of eight member states;*

Given current member state policies and expressed intents, it appears possible to satisfy this condition—potential participants are outlined below in the section "Envisioning a Common TGC ECA."

• *respects the competences, rights and obligations of those member states which no not participate therein;*

• *does not affect the provisions of the Protocol integrating the Schengen acquis into the framework of the European Union;*

• *is open to all the member states, in accordance with Article 43b.*

In order to satisfy these conditions, a TGC ECA would have to ensure that non-participating member states could reasonably adapt their national policies, participate in the same quota-setting procedure applied to the original members, and join the common TGC market. This should not be a problem. Clause (i) should also be easily met: the harmonisation of RES-E support mechanisms is unlikely to affect the provisions of the Protocol integrating the Schengen *acquis* into the European Union framework, as this focuses on immigration and data collection and transmission.

A final requirement for enhanced cooperation is found in Article 43a, which states *"Enhanced cooperation may be undertaken only as a last resort, when it has been established within the Council that the objectives of such cooperation cannot be attained within a reasonable time period by applying the relevant provisions of the Treaties."*[54]

52 Ibid
53 Ibid
54 European Communities (2002)

This requirement appears to be satisfied in the short to medium term, as the Commission has expressly stated that it has no plans to harmonise RES-E support mechanisms at this point and finds doing so to be inadvisable in short term. Moreover, the Commission itself has expressed its desire for enhanced cooperation to become a more usable framework,[55] suggesting that this final requirement will be interpreted in a manner that encourages attempts at ECAs in policy areas where a lack of complete consensus is obvious.

The absence of experience with enhanced cooperation makes it difficult to say with certainty whether a TGC ECA is likely to pass the legislative requirements. However, **a general analysis of a TGC ECA suggests that it should not encounter any insurmountable legal barriers**. Consultation with the Commission through the creation process is recommended in order to resolve any legal particularities and render the proposal feasible.

3.2. Merging Schemes—Technical Feasibility

Although it will require adjustment of some aspects of existing schemes, the process of designing a pan-European scheme will be mostly a matter of political compromise. A number of studies have explored the scheme design feasibility of merging European TGC markets.[56] A comprehensive evaluation of options for TGC scheme design conducted by the Energy Research Centre of the Netherlands reports that, in general, any TGC schemes can be made compatible.[257] While the domestic schemes currently in force contain some incongruent elements, the necessary changes to ensure compatibility are well understood and executable. A few of the most difficult design choices are discussed below.

55 Quoted in Pleuger, G. And S. Fagiolo (2000)
56 Schaeffer, G.J. et al (2000), Swedish Energy Agency, Nielsen, L. and T. Jeppesen (2005), Van der Linden, N.H. et al (2005), Jansen, J., K. Gialoglou and C. Egenhofer (2005)
57 Schaeffer, G. J. et al (2000)

Obligations

Setting national quotas will perhaps be the most difficult part of designing a common TGC market. Although in theory national quotas should be based on the RES-E potential of a country, the anticipated growth in demand, and the level of investment that has already been put into the domestic renewables market, political battles are likely to ensue over the exact methodology used to determine targets.[58]

Within overall RES-E targets for the EU, mandatory national targets could form the basis of quota setting within a TGC ECA. The Swedish Energy Agency, in envisioning how an international scheme might be designed, believes that a formal, joint method of quota setting will be indispensable to a well-functioning scheme. It proposes using a country's production facilities as a starting point for calculations, establishing an 'interval of reasonable ambition levels,' and then allowing countries to elect their specific target within this range.[59] While this suggestion might belie somewhat the complexity of determining an 'interval of reasonable ambition levels', the ability to choose a particular target within an interval offers more domestic sovereignty than a strictly determined target-setting system.

Administration

A well-designed administration will be critical to a common TGC market's success. First, a system of governance for the system must be established, which could consist of either governmental bodies operating the entire scheme or governmental bodies overseeing market players that implement and operate the system.[60] Clear, simple, and reliable rules for accreditation, issuance of certificates, trade and transfer of certificates, and redemption of certificates must be established;[61] these could follow the model of a current system or be a new design agreed upon by participants.

58 Del Rio, P. (2005)
59 Swedish Energy Agency (2005)
60 Burzynski, R. et al (2003)
61 Ibid

In order to avoid complications such as double counting of certificates, which could undermine confidence in the market, a system of common or linked registries must be developed.[62] This system should be able to validate all trades, transfer ownership of certificates, and cancel certificates. If a linked system is chosen, participants might look to the experience of member states in developing European Union Emissions Trading Scheme (EU ETS) Registries to develop a reasonable level of coordination—a number of countries used a common software to develop their EU ETS registries in order to simplify linking and to avoid duplication of effort.[63]

Moreover, in order to create market stability and give investors confidence to invest in major RES-E projects, a long-term market must be guaranteed.[64] This market must be accompanied by long term quota setting for participating countries, and these quotas should grow more stringent over time in order to stimulate new production.[65] Finally, in order not to create major market disruptions, there should be an established process should a country wish to leave the common scheme.

Administrative decisions will also include a time period for inclusion in the TGC system, as the system is designed to bring them to cost-competitiveness. Italy has capped participation at eight years; Sweden is considering capping it at fifteen and recommends that any international scheme have a limited timeframe of participation.[66]

62 Swedish Energy Agency (2005)
63 Cosmann, N. et al (2006)
64 Van der Linden, N.H. et al (2005)
65 Schaeffer, G. J. et al (2000)
66 Swedish Energy Agency (2005)

Co-existing support mechanisms

Finding the right combination of support mechanisms across a broad range of countries will be one of the biggest challenges for a common TGC ECA. Because TGC systems lead to promotion of only the most cost-competitive technologies, they are best used in concert with other more targeted RES-E support mechanisms. However, un-harmonised support mechanisms could distort international competition.

Some experts feel that co-existing support mechanisms must be harmonised;[67] others argue that they must simply be noted on each certificate and that an appropriate level of compensation must be provided for these mechanisms in any cross border trade.[68] Either of these options will be contentious—member states will have to choose whether they wish to relinquish autonomy in all RES-E support mechanism decision-making or whether they would rather grapple with designing a complicated mechanism of compensating for any differences in support received during cross-border trades.

In addition to the question of direct support mechanisms, there also exists an indirect sort of support that comes from varying levels of ease of grid access. The European Renewable Energy Council, representing the interests of biomass, geothermal, PV, small hydropower, solar thermal, and wind energy in Europe, has called for harmonisation and strengthening of grid access and transmission for RES-E as one of their key recommendations for future European RES-E support.[69] In the case of a common TGC market, some sort of minimum standard for system access might be put in place to ensure that producers do not bear vastly different grid connection costs.[70]

67 Nielsen, L. and T. Jeppesen (2005)
68 Schaeffer, G. J. et al (2000)
69 European Renewable Energy Council
70 Schaeffer, G. J. et al (2000)

Certificates

Certificates in a common TGC scheme will require a high degree of standardisation in order to have all participants feel comfortable recognising certificates from other participating countries. It is generally recommended that the certificates contain unique serial numbers and detailed production characteristics (generator identification, site of production, unit, period of production, number of MW produced, etc).[71] In the case that complementary RES-E support mechanisms are not fully harmonised, certificates must be earmarked to show how much, if any, additional public support has been received by a producer. Moreover, per a requirement in the RES-E Directive that requires that any imports being used to meet a member state's quota be explicitly earmarked by the exporting state as acceptable for such,[72] internationally traded RES-E certificates must carry some clause to this effect.

The RES-E Directive of 2001 also required all member states to put in place a system of Guarantees of Origin (GoO) before 2003. GoOs are to be issued, by a competent body, to certified producers of RES-E on the basis of hours of RES-E produced and they are required to be mutually recognised by all member states.[73] member states have since developed highly divergent GoO systems, some that are quite detailed in the information they provide and others that are unacceptably basic for a common TGC scheme.[74] As there is, however, at least a basic GoO scheme in place in all countries, the Centre for European Policy Studies has recommended that the GoO system replace the TGC/TREC system in countries where there are both.[75] Similarly, a coordinated or acceptably compatible GoO system could become the unit of trade of the common TGC market.

71 Nielsen, L. and T. Jeppesen (2003)
72 European Parliament and Council (2001)
73 European Parliament and Council (2001)
74 Van der Linden, N.H. et al (2004)
75 Jansen, J, K. Gialoglou and C. Egenhofer (2005)

One option for certificate design is to use the certifying system currently in place for voluntary international trade of RECs, overseen by RECS International. RECS has created an Association of issuing bodies who oversee the European Energy Certification System (EECS). Under the EECS scheme, issuing bodies certify producers; issue certificates; manage, record, and verify all transfers; and maintain a registry of all producers and certificates along with the current owners of certificates.[76] As this system is currently being used as the basis of GoOs in six member states,[77] it might make for a comfortable system to use in a common TGC system.

Banding

Both Sweden and the UK are considering 'banding' of technologies in their TGC schemes, so as to promote a wider diversity of energy sources by putting RES-E sources that are similar in their levels of cost-competitiveness into technology bands. There is dispute as to whether certificates should be distinguishable between different technologies: should a government be allowed to promote certain specific renewable technologies by requiring separate percentages for different 'bands' of renewable sources? Technologies could be divided into groups based on marginal production costs, separating cost-competitive technologies, modestly-non competitive technologies, and truly non-competitive but promising technologies.[78]

While banding would solve the weakness of TGCs promoting only mature technologies, it could lead to a much thinner market.[79] However, this is more a concern at the member state level—the enlarged market created by a common TGC scheme might provide the necessary size to make banding of technologies more feasible, thereby improving the scheme's ability to promote a wider diversity of renewable energy technologies. Conversely, banding might increase the administrative burdens of a scheme and there is little practical experience with a banded scheme. Nevertheless, in consideration of the European goal of promoting a diversity of energy sources, banding could be very important in helping a TGC market to achieve both cost-effectiveness and technological diversity, thereby overcoming TGCs' major inherent weakness in comparison to FIT schemes.

76 Association of Issuing Bodies (2004)
77 Jansen, J, K. Gialoglou and C. Egenhofer (2005)
78 Jansen (2003)
79 Nielsen, L. and T. Jeppesen (2003)

Further Design Considerations

In addition to these likely difficult design choices, there exist a number of more benign points that will require harmonisation (compliance periods, minimum certificate prices, penalties, RES-E technologies included, etc). These are summarised in the table80 on the following page, along with the design recommendations of experts and the designs chosen by the five current schemes.

While the above considerations are important decisions to be made in designing a scheme, these choices need not inhibit creation of a common TGC system. Now that a number of European countries have experience with TGC schemes, the technical expertise exists to design an appropriate scheme and transitional mechanisms that would allow participants to adapt as seamlessly as possibly to the new schemes. Once an initial group of ECA participants were gathered, the group could work with experts to design an effective TGC scheme, keeping in mind the eventual goal of scheme expansion to the European Union level.

80 Information in the Comparison Table has been compiled from UK Department of Trade and Industry (2006b), UK Department of Trade and Industry (2006c), Lorenzoni, A. (2003), van der Linden, N.H. et al (2005), International Energy Agency (2006), Schaeffer, G. J. et al (2000), Swedish Energy Agency (2005), Sandulescu (2005), and Apostal (2006).

Comparison Chart of member state Obligation-based TGC Schemes

	Recommended	Italy	Sweden		UK	Wallonia	Flanders	Romania
Source of demand	Suppliers	Producers and Importers	Consumers; proposed switch to suppliers for 2007		Suppliers	Suppliers	Suppliers	Suppliers
Quantitative obligation	Based at least in part on country's renewable capacity	2% for first 8 years	7,4% in 2003 rising to 16,9% in 2010		6,7% for 2006/07 rising to 15,4% by 2015/16.	7% in 2007	0,8% in 2002 rising to 6% in 2010	0,7% in 2005 rising to 8,3% in 2012
Eligible RES-E Sources	Should be standardised	Only for *new* RES-E after April 1, 1999	Wind, solar, wave, geothermal, biomass, peat, hydro<1.5 MW		No existing hydro >20 MW, co-firing of biomass phased out by 2016	RES-E and CHP, based on avoided CO2 emissions	No combined processing with residual wastes	Wind, biomass, solar, and hydro < 10 MW
Development over time of obligation	Should be guaranteed to increase	increased by .35% 2004-2006	Percentage increase each year		percentage increase each year	percentage increase each year	percentage increase each year	percentage increase each year
Penalty for non-compliance	Factor above the average market price	Compliance required -issuing body will provide certificates necessary to meet demand	150% avg certificate price		2006-2007: 33,24/MWh (buy-out price)	€ 125 in 2003	€ 100 in 2004 and € 125 in 2005	150% avg certificate price until 2008; then 200%
Minimum Price	Must be standardised	For 2003/2004, market had set price	2007: 2.2 Euro/MWh; phased out over 5 years		None	None	None	24 Euro/MWh
Period of certificate validity	At least several compliance periods	1 year	Unlimited		2 years	5 years	5 years	
Use of money collected from sanctions	R&D or subsidies for less developed technologies	NA	General Purpose		buy-out fund recycled to suppliers presenting ROCs		Renewable energy fund	
Banking	Not to exceed 25%	No	Yes		up to 25% of obligation	5 years	5 years	Yes
Borrowing	For short period, with an interest rate and deposit sum	No	for 3 months after compliance		No	No	No	

4. Will it be done? Envisioning a TGC Enhanced Cooperation Agreement

4.1. Member State Participation

The question of political feasibility is more challenging than that of technical feasibility—if the proper political will is generated by a group of committed member states, settling upon a scheme design will be considerably easier. While a TGC ECA will require concerted effort and motivation out of a few forward-thinking countries, it appears that the political will does exist in the Union to form such a group. Moving from political will to a concrete proposal will require two conditions be met at a member state level: first, a minimum of eight participants must be identified; and second, these participants must accept the political and economic costs and benefits of participation.

A Group of Eight: the Potential Participants

Enhanced cooperation requires the participation of a minimum of eight member states[81]; given that just over one third of member states have implemented or expressed strong interest in TGC markets, this requirement could be met.

The Ministry of Sustainable Development in **Sweden** has recommended expansion and internationalisation of TGCs, provided that certain market conditions are met.[82] **Denmark** has postponed its proposed system, specifically for the reason that it is waiting for a larger, multi-country TGC market to be initiated.[83] **Finland** is also anticipating the creation of an international market.[84] Although having abandoned a voluntary TGC scheme, **the Netherlands** has expressed interest in the possibility of joining an international obligations-based TGC market and has in place the infrastructure to do so.[85] **Hungary**, while not having expressed specific interest in an expanded market, is waiting for its market to reach a "a critical mass of 300-350 MW."[86] Given the small size of its market and the articulated plans to wait for market expansion, Hungary could benefit from taking part in a larger scheme.

Adding to these five parties five other countries with established schemes, **UK, Belgium, Italy**, **Poland, and Romania,** a group of an acceptable size for an ECA can be formed. Belgium is primed for scheme harmonisation: there is a large amount of political pressure being applied within Belgium for internal harmonisation, and this transition could be used to move towards an international market. Moreover, other countries such as **Austria** who have experimented with or considered the idea of TGCs in the past might renew interest once the process of forming an ECA were underway.

81 European Community (2001)
82 Ibid
83 Unger, T. and E. O. Ahlgren (2005)
84 Ibid
85 Van der Linden, N.H. et al (2005)
86 Austrian Energy Agency (2006)

From Numbers to Political Reality: the Costs and Benefits of Participation

Sweden has been the most pro-active in investigating a common TGC marketplace (in part because of serious plans to incorporate Norway into its market), and has produced a comprehensive report on "The Consequences of an expanded electricity certificate market." In the report, the Swedish Energy Agency rightly acknowledges that a common TGC market will require a political shift in participants from a focus on the amount of domestic renewable energy to finance, to a focus on how much RES-E production participants are willing to finance *regardless* of whether or not the production actually occurs in Sweden or some other country. [87]

The Dutch experience with a voluntary TGC market illustrates clearly the national sacrifices that must be made to move towards a common market: when the Netherlands chose to open their voluntary TGC market to imports of RES-E, they were met with considerable frustration at the fact that the Dutch ended up supporting primarily external RES-E producers. Ultimately, they cancelled the system in response to these frustrations. A similar concentration of RES-E sources in those countries with best resources is likely to occur in a quota-based system which encourages efficient production. Though this concentration of RES-E capacity in the most efficient locations is economically sound, it requires that certain countries sacrifice domestic RES-E resources in order to promote efficient RES-E production throughout the ECA participating states. The advantages can be argued to far outweigh the costs: with a quota-based system, domestic suppliers will meet their quotas more cheaply, and there will be a larger, more predictable TGC market. This expanded market will be better able to balance the inevitable shortfalls and surpluses that accompany fluctuations in RES-E production capacities, and will increase investor confidence across the market.
Countries electing to participate in a TGC ECA will have to acknowledge

87 Swedish Energy Agency (2005)

that these advantages come at the cost of domestic RES-E capacity development, and embrace the movement towards a economically and politically stronger and more cohesive Europe that a TGC ECA would create.

4.2. European Union Institutional Positions

As a TGC ECA would be based upon Commission opinion and approved by a qualified majority of the Council, it would need to have the support of these entities in order to be established.

As mentioned, **the European Commission** is encouraging the 'sub-harmonisation' of RES-E support mechanisms as a precursor to a fully harmonised Community support system. This seems to indicate that the Commission would be predisposed to approve of a TGC ECA, given that it met all technical and legal requirements. The Commission has also expressed its support for a more practical interpretation of enhanced cooperation: during negotiations over the requirements for enhanced cooperation, it called for changes in the rules to allow the mechanism to function "in an operative manner," as the "more heterogeneous shape of an enlarged Union should not keep those Member states who intend to use the institutional framework of the Union for a closer cooperation from doing so."[88]

The European Council, in its meeting of March 2006, commended the Commission's push for a European Energy Policy and called for a European energy policy that aims for "coherence between member states."[89] The Council expressed its wishes that EU-wide development of renewable energies be continued beyond 2010 and that the "transparency, effectiveness and certainty of support policies" be ensured.[90] However, it also cautioned that specific member state characteristics should be taken into account when striving for more coordinated energy policy. These position statements sound promising, although the Council has given no specific hints on whether or not it might support a TGC ECA. In any case, the Council will base its decision largely upon the recommendations of the Commission report, which is required to be issued to the Council within three months of a request for an Enhanced Cooperation Agreement.[91]

While support by the **European Parliament** would only be strictly necessary in the case where the Commission does not approve of an ECA, the Parliament's backing of a common TGC ECA appears likely based on previous positions. The Parliament has called for stronger, mandatory RES-E targets for 2020. To meet these targets, it has asked that a harmonised European system be created that emphasises cost-effectiveness and technological diversity but that member states be given sufficient transitional time to adapt to this system.[92]

4.3. Industry support/opposition

As Council support for a TGC ECA is likely to be influenced by industry support or opposition, this section outlines the likely positions of some key industry groups. The conglomeration of renewable energy associations represented by the **European Renewable Energy Council (EREC**) is receptive to the idea of harmonising RES-E support mechanisms in the long term, but believes it is too early for full policy harmonisation. They outline several complementary policy areas as prerequisites to full harmonisation, such as the abolition of subsidies for traditional energy sources and the improvement of the Internal Energy Market.[93] The European Wind Energy Association adds that any community-wide mechanism must be well designed to minimise investor uncertainty, ensure continuous development, and not harm the market of any participating member states[94] (as complete harmonisation

88 Quoted in Pleuger, G. And S. Fagiolo (2000)
89 Council of the European Union (2006)
90 Ibid

91 European Communities (2002)
92 European Parliament (2004)
93 European Renewable Energy Council
94 European Wind Energy Association (2005)

to a TGC scheme might, at this time). In terms of use of a TGC system, EREC believes that additional experience must be gained before full harmonisation and investor confidence in the certainty of the scheme must be maintained;[95] a TGC ECA would allow for exactly such experience.

The **European PV Association** has understandably been less enthusiastic about a common TGC market. To date, FIT schemes have been the single most effective support mechanism for solar power, as it is less cost competitive than other sources.[96] EREC lends its support to solar energy's worries by stating that technological diversity must be a goal of RES-E support schemes.[97]

Overall, it appears that the RES-E industry might offer support to experimentation with a TGC ECA, but given certain conditions. The industry would be much more inclined to favour a common TGC market that utilised banding to promote technological diversity, and would also likely support the accompaniment of a market by minimum grid access standards in participating countries. It would be unlikely to endorse a common TGC market as the policy measure ultimately utilised for full EU harmonisation until careful analysis of the experience of a TGC ECA were conducted.

RECS International, the group responsible for overseeing voluntary international trade of renewable energy certificates, is strongly in favour of a common green certificate market, and they recommend that a system ultimately be based upon guarantees of origin.[98] Understandably, RECS International advocates the use of its system as the oversight authority for international trade of certificates.

95 European Renewable Energy Council
96 European PV Association (2005).
97 European Renewable Energy Council
98 RECS International (2005)

The electricity industry also appears favourably disposed to a movement towards a harmonised RES-E support system, and has shown support for a market mechanism as the preferred support framework. **Eurelectric, the Union of the Electricity Industry**, has called for a regulatory framework for RES-E that is "market-based, capital efficient and designed to avoid market distortions."[99] TGCs are the renewable support policy that best conform to these criteria, and an expanded market would help lower the prices of electricity suppliers complying with RES-E regulations. This suggests that electricity suppliers are very likely to support a TGC ECA, as it will boost competition and increase RES-E market size and liquidity, thereby allowing them to meet RPS obligations at lower costs.

Finally, **BusinessEurope**, which represents more than 20 million companies, has offered its support for greater common initiatives in the energy field. The president, Ernest-Antoine Seillière, stated in 2006 that ***"We can no longer afford the luxury of twenty-five energy policies developing without reference to a shared strategy."***[100] In terms of renewable energy, BusinessEurope is in strong support of the use of market mechanisms to promote greater RES-E production, and calls for further government action to meet 2010 RES-E targets in a manner that does not hamper the competitiveness of European Industry.[101] These position statements suggest that BusinessEurope would favour the eventual use of a TGC scheme at an EU-wide level, and would likely support a TGC ECA as movement towards this objective.

99 Euractiv (2004)
100 Union of Industrial and Employers' Confederation of Europe (2006a)
101 Union of Industrial and Employers' Confederation of Europe (2006b)

4.4. Overall Political feasibility

The political feasibility of a TGC ECA is conjecture at this point in the untested waters of both enhanced cooperation and international quota-based TGC schemes. Nevertheless, a TGC ECA offers an opportunity for major market efficiency gains with little threats to non-participants who can continue domestic support of RES-E through their preferred mechanisms. It also has the backing of widespread political and industry support of efficient, coordinated efforts to promote RES-E and a political realisation that the parameters of enhanced cooperation must be interpreted to allow for appropriate usage of the framework. A TGC ECA might therefore be a form of experimentation with both enhanced cooperation and renewable energy policy harmonisation that would be acceptable to all involved and exterior parties.

Conclusions: Powering Forward

Building upon the experience accrued through national TGC markets and recognising their limitations, significant progress in the promotion of RES-E could be made through market enlargement to a pan-European TGC market. Placed in the context of a larger effort to promote renewable energy, and complemented by collaborative R&D, a common TGC market could significantly stimulate accomplishment of the EU's renewable energy objectives. As all member states are not prepared for participation in a common TGC market, yet Community oversight is desirable, the innovative framework of enhanced cooperation offers a perfect mechanism through which to create a common TGC market. Use of an ECA will allow for economical and political gains for participants while working within the EU system to create a model of how eventual EU RES-E policy could proceed.

That said, creation of a common TGC market through the use of an ECA will not be without obstacles. As there is very little experience with ECA formation, the process does not have an excellent example to follow. This

inexperience, though, could also make a TGC ECA a model for future collaboration in the energy sector or other sectors. In this way, it could be very positive for participants and the EU as a whole.

In designing a TGC ECA, careful consideration will have to be given to both technical design and legal acceptability of the scheme. Communication and collaboration with the Commission is encouraged to expedite the process of creating an acceptable scheme. In moving to a common scheme, each country should carefully design their transitions to such a scheme in order not to shake investor confidence. Some market design considerations merit special attention, such as banding of technologies. Technology banding could add to the effectiveness and the politically feasibility of the scheme, but much attention would need to be devoted to creating the necessary administrative capacity. Additionally, member states will have to decide upon how to treat co-existing support mechanisms and, more generally, how they wish to collectively define RES-E sources. With proper collaboration and political will, designing a TGC ECA appears feasible.

The political decision to form a common TGC market will have to be based on the realisation that all countries stand to gain from a more efficient European RES-E market. With harmonisation, member states are required to relinquish some of the control that they have over the types of technologies they want to support, and the locales which producers choose. This trade-off must be acknowledged, and the goal of a stable, secure, competitive Europe put above localised concerns in order to proceed with a TGC ECA. If member states are able to do this, **the benefits of participation in such an innovative policy and market mechanism will far outweigh the costs.**

In addition to participating member states, a TGC ECA will benefit the Community and non-participating member states. As enhanced cooperation is intended to reinforce the process of moving towards a more integrated Europe, the creation of a TGC ECA will serve as a sort of laboratory to test the possibilities of an eventual harmonised EU TGC market. Moreover, a TGC ECA accounts for the heterogeneity of member states by not forcing all member states to adopt a TGC market if their national situations are ill-suited to this particular policy measure. Rather, an ECA will allow member states the flexibility to join the TGC market when their domestic markets are well-positioned to do so. In this way, a TGC ECA will serve to strengthen the EU's integration through bridging the divide between current member state policies and an eventual EU-wide policy, while promoting RES-E in optimum locations at minimum costs.

Given the potential of a common TGC scheme, there are two key next steps. First, member states must assemble the political will to act as innovators in the use of enhanced cooperation. Second, the EU must facilitate this action by recognising that such an agreement will indeed promote the Union's objective of a clean, secure, and diverse energy supply.

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