



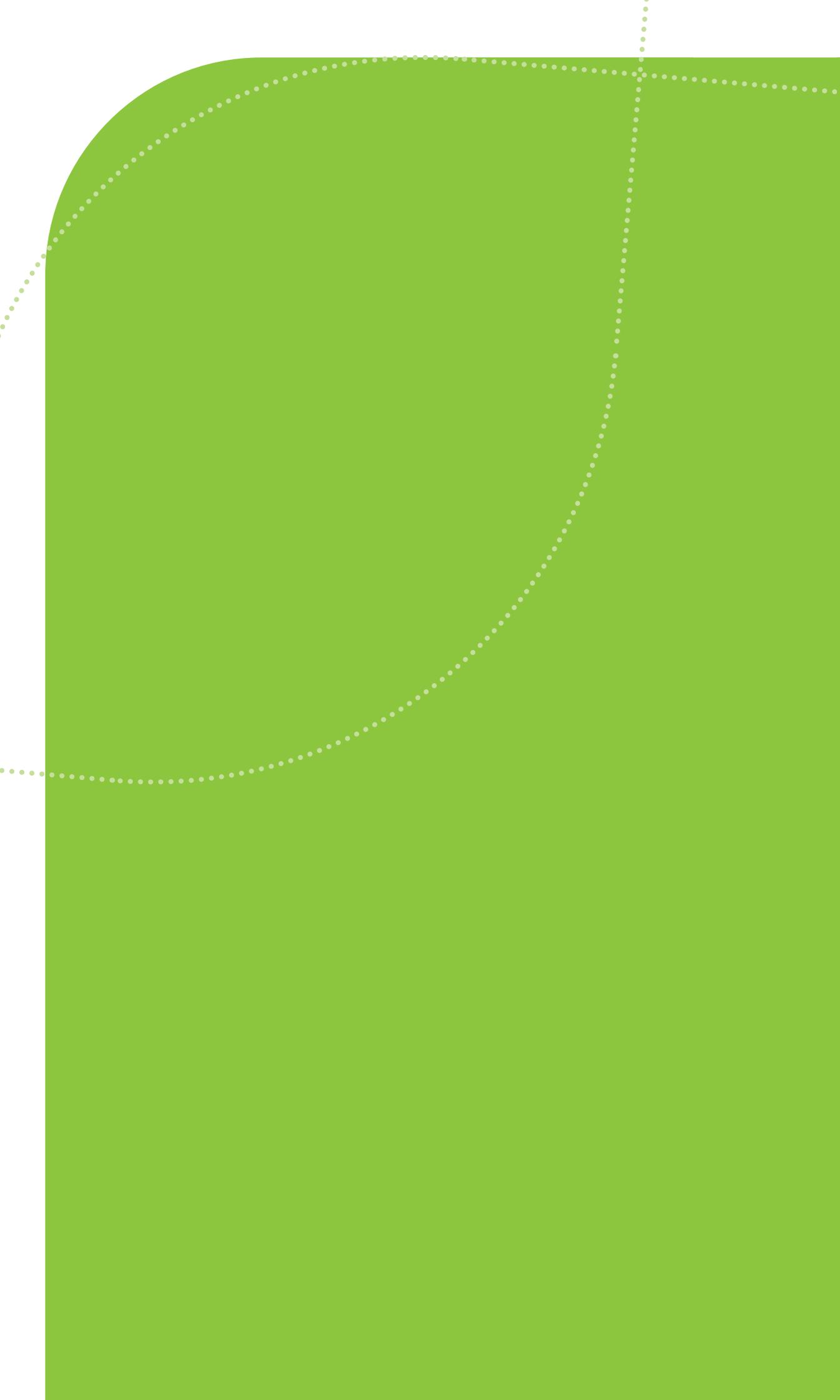
**GREEN EUROPEAN
FOUNDATION**

The Role of State Aid in Creating a Green Economy

A policy report by E3G



The Greens | European Free Alliance
in the European Parliament

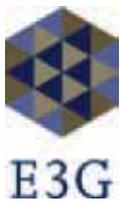


Green New Deal Series volume 10

The Role of State Aid in Creating a Green Economy

State Aid Modernisation – Recommendations to
policy-makers for the review of the EU Environmental
and Energy Aid Guidelines

November 2013



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Foreword by Reinhard Bütikofer

EU state aid rules, which determine whether a government is allowed to give support to a company, sounds like an extremely dull topic. I strongly believe this is false and I hope to be able to convince you, at least to some degree, to also take a more engaging view. The think-tank E3G has produced a report commissioned by the Greens/EFA Group in the European Parliament which is extremely revealing and educational, and which will give the discussion around revising EU state aid rules the attention it deserves.

The EU's economic outlook is bleak at best. Social precarity is growing unabated. The environmental crisis has a hard time making headlines despite the fact that the risks of global climate change are becoming more obvious than ever. This triple crisis creates insecurity, very negative social and environmental impacts, and it undermines Europe's innovation potential and the EU's competitiveness. The EU has not come up with an answer to the very urgent request from all corners of Europe to fight youth unemployment and make sustainable growth and good green jobs a priority.

Market forces left to themselves will not drive the economic and societal transformation we need. Governments urgently have to set framework conditions that steer competition and innovation in a new, green = sustainable, direction. This is where state aid rules, besides other instruments, should play a role. An adequate reform of state aid rules would provide an excellent opportunity for promoting a transformation of the economy. The EU is revising its state aid rules and environment and energy aid guidelines. Now is the time to get involved in this discussion.

The EU's state aid framework must be made compatible with moving towards a low-carbon, efficient and climate-resilient economy as outlined in the Europe 2020 strategy.

The study is driven by the leitmotif of increasing resilience, lowering the cost of decarbonisation and of promoting technological, social and business innovation.

Getting the state aid revision right means getting the framework conditions right for a Green New Deal. This study makes a crucial contribution to this. I would like to thank E3G, particularly Nick Mabey, and the Green European Foundation for ensuring that this important work reaches the widest possible audience.

Reinhard Bütikofer
Member of the European Parliament for the Greens/EFA Group
Co-Chair of the European Green Party

Delivering an Efficient Transformation to a Low-Carbon and Resource-Efficient Europe

Recommendations for the review of EU State Aid Environment and Energy Aid Guidelines (EEAG)

E3G Report, November 2013¹

Summary

■ The EU faces growing macro-economic challenges from climate change and resource scarcity which are already increasing costs for European consumers and businesses. Rising fossil fuel prices increased Europe's energy import bill to €573bn/yr in 2011². The Europe 2020 strategy recognises that maintaining European competitiveness requires a transformation to a highly resource-efficient and low-carbon economy. Revisions to the state aid guidelines must reflect these common European objectives and future economic trends.

■ The transformation to a low-carbon and resource-efficient economy will involve major increases in investment, rapid innovation and the creation of new markets across Europe in the next decade. Investment in the power sector alone will double. The resulting jobs and growth will play a key role in the European economic recovery. At a general level the state aid review should support this shift as part of its objective of creating a 'strengthened, dynamic and competitive internal market'³. An effective state aid framework will be critical for creating the conditions for an efficient transformation by removing support for inefficient and polluting industries and opening markets to competition, innovation, new entrants and disruptive business models. A more interconnected European electricity market alone could save over €400bn by 2030⁴. Stronger European energy efficiency markets would save much more.

■ The aim of the state aid review to 'focus enforcement on cases with the biggest impact on the internal market'⁵ should imply a stronger focus on addressing fossil fuel subsidies and support measures for energy-intensive sectors. Analysis by the OECD and the European Commission shows a large range of continuing measures which undermine European policy goals and market efficiency. Following the same logic, sectors with well-understood and pervasive market failures such as energy efficiency, or where action facilitates greater competition such as energy interconnection and the creation of demand-side markets, should face a streamlining of rules.

■ The revised Environment and Energy Aid Guidelines must support the objectives and balance of the overall state aid modernisation process. The guidelines must not be too precise in trying to define the appropriate forms of government intervention; the complexity and uncertainties surrounding different national markets, resources and energy infrastructure would make such definition over-prescriptive.

■ The urgency of the climate change challenge means that the transformation to a low-carbon economy will require significant government intervention to drive change at the necessary pace and scale. The economy must observe ecological dynamics, not vice versa. If state aid procedures try to micro-manage the detailed design of all low-carbon support measures they will be overwhelmed, and will risk becoming a drag on the delivery of the Europe 2020 goals for decarbonisation, investment and growth, or, even more seriously, drive higher costs and security-of-supply problems in Member States. Tests for the 'proportionality' of interventions must, for instance, recognise economic resilience goals and the shifting structure of energy markets.

■ The review of the EEAG must closely align with the objectives of the state aid modernisation process and actively support Europe's long-term energy and environmental goals. The greatest savings to consumers can come from govern-

1 E3G is an independent non-profit organisation working to accelerate the transition to sustainable development based in Brussels, London, Berlin and Washington. E3G thanks the Greens/EFA Group in the European Parliament for supporting this research. The views expressed are solely those of E3G.

2 Statement by Commissioner Hedegaard, June 2012.

3 Communication on EU State Aid Modernisation (SAM) COM/2012/0209, May 2012.

4 Power Perspectives 2030, European Climate Foundation, 2011.

5 Communication on EU State Aid Modernisation (SAM) COM/2012/0209, May 2012.

ment interventions in areas of high market failure such as energy efficiency. In these areas, state aid should rely more on the pre-communication of baskets of measures, and monitor abuse through ex-post investigation of whether support meets disciplines such as non-discrimination. Approval procedures should be simplified for measures included in long-term, economy-wide strategies as this reduces the potential for ad-hoc abuse. The revision of the Energy and Environment Aid Guidelines must prioritise outcomes in three areas:

1. Lowering the Costs of Decarbonisation and Resilience

■ Given the extent of pervasive market failures, new block exemptions should be given for all energy efficiency measures included in National Energy Efficiency Action Plans, which are already required under EU legislation. A similar approach could be used for measures aiming to incentivise transformational improvements in resource efficiency in product markets.

■ State aid guidelines should not attempt to define the detailed structure of national renewable energy support policies (e.g. by specifying technology neutrality) as in some situations this approach can increase price and security risks to consumers.

2. Driving Liberalisation and New Market Growth

■ State aid processes should help eliminate existing market distortions and ensure that all government interventions *demonstrate that demand- and supply-side solutions face a level-playing field*. The EEAG must explicitly require electricity capacity mechanisms to actively support demand reduction, smart grids, storage, and international transmission solutions, and should allow early-stage market support in these areas.

■ The revised EEAG will include provisions on electricity interconnectors. They must support optimal integration of European electricity markets and avoid being overly restrictive, which would lead to further market distortion and higher costs to consumers. There should be a clear presumption against any state aid support for electricity interconnectors for accessing coal power resources from outside the European Emissions Trading Scheme (EU ETS) regulated zone.

■ There is a need to support a transition in energy-intensive industries, not least for social reasons, and to drive a shift to low-carbon forms of production. However, too much of the support provided so far has had no incentive effect or effective social targeting. State aid should be more pro-active in examining measures supporting incumbents in fossil energy and resource-intensive sectors.

3. Ensuring Low-Carbon Investment Flows

■ Responding to concerns about the ‘crowding out’ of private investment, European state aid rules are extremely restrictive on the role public financial instruments can play in supporting the low-carbon transition. Such restrictions can, counter to expectation, raise costs for consumers by forcing governments to provide higher subsidies to private investors rather than directly reduce risk through efficient public financial instruments. This is especially the case given private sector risk aversion in the wake of the financial crisis.

■ State aid exemption should be given to public financial institutions and products with a clear low-carbon purpose⁶. Supporting measures should also be provided within the purview of a low-carbon development plan. Delivery of lower-cost interventions should be a sufficient objective for a public financial instrument, even if private finance is available at a higher cost.

⁶ The paper uses the term ‘low-carbon’ Europe to refer to the over 95% reductions in EU GHG emissions needed beyond 2050 to be consistent with the EU goal of maintaining global average temperatures below 2C. This term does not imply the potential use of specific supply technologies – such as nuclear energy, CCS or large scale biomass – in achieving this goal but is a description of the necessary end state for the European economy.

1. The Economics of Low-Carbon and Resource-Efficient Transformation

The EU faces the related challenges of climate change and growing resource scarcity (e.g. food, water, energy, minerals) which will have fundamental impacts on productivity and competitiveness. These impacts will be driven by price rises and increased price volatility, as well as through the rising direct costs of climate change impacts (including the cost of adaptation to forecasts of future impacts)⁷.

Climate change and resource scarcity are already exerting macro-economic impacts on the European economy, increasing prices and costs to businesses and consumers, increasing in-

vestment risk and impacting competitiveness. In some cases markets will be able to respond effectively to expectations of future prices and costs, but in many cases responses are characterised by large-scale market failures. For example, pervasive market failures have resulted in sub-optimal penetration of energy efficiency technologies despite large increases in global oil prices. Europe has seen its fossil energy import bill rise by €200 billion since 2009 despite gradual declines in the absolute quantities of energy consumed and little change in the share of imported energy over the same period.

⁷ For estimates of EU climate vulnerability see EEA report *Climate change, impacts and vulnerability in Europe 2012*, November 2012.

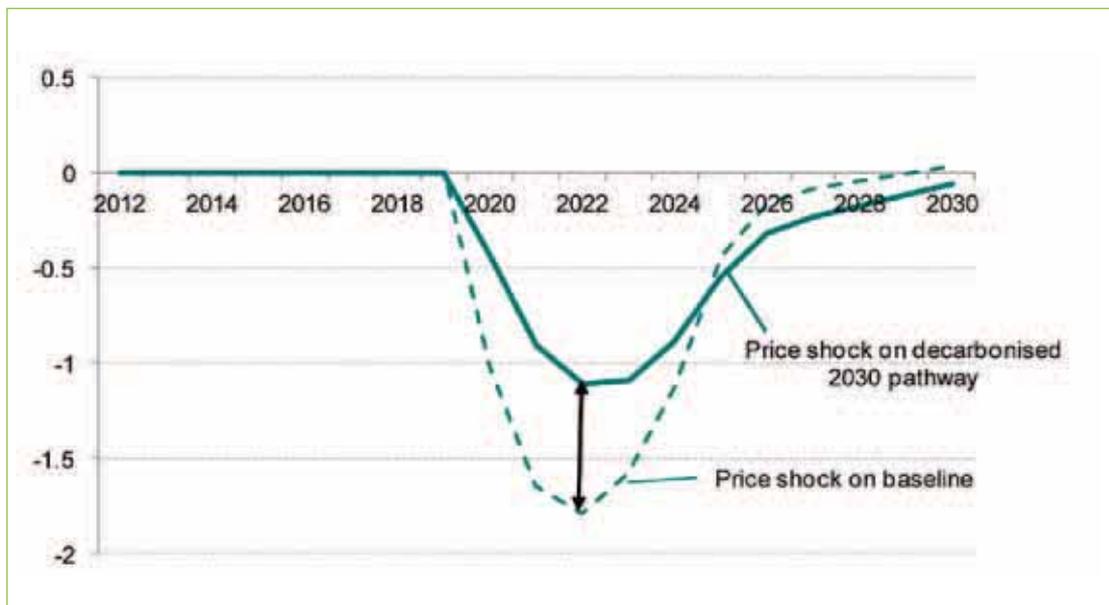
Responding to these challenges requires a rapid shift to an essentially zero-carbon European economy by 2050, increases in resource efficiency (and potentially in domestic production), and investment in climate resilience across public and private infrastructure. Changes will occur across the whole economy affecting most areas of critical infrastructure investment. For example, 70% of the UK's £200 billion investment pipeline to 2020 is already low carbon or low carbon enabling⁸ and all must become resilient to future climate stresses⁹.

Delivering this transformation will require major shifts in business models and the creation of new markets in areas like electricity demand-side services, resilient infrastructure and deep building efficiency retrofiting. The EU electric utility sector has already seen a radical shift in the viability of

current business models in the past three years. The impacts of climate change and resource scarcity on global commodity markets will shift patterns of domestic production and drive investment in demand reduction to reduce exposure to global price shocks¹⁰ (Figure 1).

The transition to a low-carbon and climate-resilient economy will drive markets far from any 'equilibrium' point, and endemic uncertainty over market demand, technology, prices and business models will persist for at least the next few decades. The pace of deployment of new low-carbon energy technologies will need to be more than twice as fast as has historically been the case in many of these sectors¹¹. Furthermore, existing capital markets are not designed to support the scale of investment needed¹².

Figure 1: Effect of a simulated oil price strike on EU27 GDP – difference in GDP from non shocked GDP path, for each year (in % pt)



Source: Oxford Economics, European Climate Foundation (2011)

8 For low carbon component of UK infrastructure pipeline see the Green Alliance's *Infrastructure investment and the UK's economic renewal*, June 2013.

9 *UK Climate Change Risk Assessment: Government Report*, UK Government, January 2012.

10 For analysis of climate change impacts on global supply chains and prices see PwC's report to Defra *International threats and opportunities of climate change for the UK*, June 2013 ; for analysis of resource scarcity and future price volatility see Chatham House's *Resources Futures* report, December 2012.

11 *Who Owns Our Low Carbon Future? Intellectual Property and Energy Technologies*, Chatham House, September 2009

12 An example of analysis of the low carbon 'finance gap' can be seen at Ernst & Young study *UK Capitalising the Green Investment Bank – Key issues and next steps*, October 2010.

In the current context of economy-wide market failures and the need for transformational change there is no guarantee that marginal investment decisions by market actors in response to short-term prices will deliver efficient long-term investment patterns or maintain necessary levels of vital service provision. In fact, scenario modelling of investor decisions in the UK power sector up to 2030 suggests that investments driven by short-term price expectations can result in consumer exposure to very high price risks in the medium term under different demand, prices and technology scenarios. Under some scenarios where gas investment is high this can result in price increases of 90% by 2030 for the same carbon emission reductions compared to investment mixes containing more renewable energy and energy efficiency.

The urgency of the climate change challenge means that the transformation to a low-carbon economy will require more government intervention to drive change at the necessary pace and scale. The economy must observe ecological dynamics, not vice versa.

The low-carbon and efficiency transformation presents three fundamental economic challenges for government policy making:

- **Resilience:** maintaining service delivery and affordability to consumers during the transition.
- **Investment Scale-up:** incentivising increased volumes of financial investment including into new business models and technologies which are perceived as 'risky' at a time when the effects of the economic crisis have decreased risk appetites and investor confidence.
- **Innovation and Competition:** ensuring a clear direction for the provision of public goods while promoting more private sector innovation, market transformation and new market entrants.

Governments must therefore balance the necessity of maintaining basic service provision in energy, food, construction, etc. with the requirement of putting their economies on a cost-effective path to a resilient, low-carbon future. This requires that European governments reduce market risk in order to ensure investment certainty (for example, through financial risk instruments deployed by the European Investment Bank and national public banks) and that they provide targeted incentives and demand for innovative goods and services (for example, through feed-in tariffs or government procurement for renewable energy). All of these measures require state aid clearance.

The need to deliver public goods, maintain service delivery (e.g. in the electricity sector) and drive more investment can encourage governments to rely on specific private sector incumbents as delivery agents, thus increasing barriers to competition ('low carbon corporatism'). However, this is self-defeating as a successful and competitive low-carbon transition requires technological and business-model innovation and thus increased openness in markets and more new market entrants. Governments need to find creative policy solutions which provide resilience, scale and innovation.

Delivering the low-carbon and resource-efficient transformation cannot be achieved purely through price incentives working through existing markets and business models. However, neither should it be about less competition or general re-regulation and public control of the economy.

Efficient and effective ecological transformation requires a creative combination of enough government intervention to provide adequate direction for private investment, and enough market openness to deliver innovation and creative disruption.

What is state aid?

State aid refers to forms of assistance granted to selected undertakings by national public authorities, which have the potential to distort competition and affect trade between member states (Article 107(1) TFEU). Subsidies granted to individuals or general measures open to all enterprises are not considered to constitute state aid.

Rules are in place to ensure fair competition and a single common market, and to prevent public interventions to unduly distort the normal competitive market, hinder long-term competitiveness by supporting inefficient aid-dependent undertakings, or allow member states to favour their own industries.

The treaty on the functioning of the EU forbids state aid (Article 107(1) TFEU), **with certain exemptions**. In some circumstances government interventions are necessary for a well-functioning and equitable economy, and the treaty stipulates that state aid which promotes legitimate objectives can be exempt from that prohibition (Article 107(2) & (3) TFEU). In the context of the European low-carbon transition, the potential exemptions to 'an important project of common European interest' (107(3b.)) and to 'facilitate the development of certain economic activities' (107(3c.)) are particularly relevant.

It is these Treaty exemptions, on which the Commission's frameworks, guidelines and block exemptions are based, which allow Member States to legally confer certain advantages on undertakings that will promote research, development and innovation, environmental protection, investment in SMEs or access to broadband.

The European Commission monitors and controls state aid in the EU. Only the European Commission can grant an exemption. Member States must thus notify and seek approval from the Commission before granting state aid. If aid is granted before the Commission has given its approval and is later on found to be in breach of the rules, the Commission is obliged to order the recovery of any aid from the beneficiaries. This involves repayment with interest to the public authorities that granted the aid, even if this means that the companies concerned go bankrupt.

It is one of the most powerful levers the European Commission has at its disposal to enforce internal market principles.



2. Impact of the Low-Carbon and Resource-Efficient Transformation on EU State Aid

2.1 The Challenges that Transformation Presents to the Application of State Aid Principles

The pragmatic reality of the need for policies to drive transformational shifts in real markets presents a systemic challenge to the application of state aid across wide sections of the European economy. State aid rules have been designed around a set of economic assumptions that imply that free, competitive markets are the best way of delivering low-cost and high-quality products to the consumer. Externalities are assumed to be relatively small and state intervention in market operation should be limited and temporary. While these assumptions have been a good approxima-

tion of reality in many situations in the past, they are not appropriate for the low-carbon transformation of the coming decades.

The state aid regime needs to allow the evolution of new, appropriate public policy tools and interventions while controlling abuse. Principles such as proportionality must balance the need to control climate risk and ensure economic resilience in the face of short-term impacts against 'ideal' market structures. A pragmatic approach will be needed which focuses on minimising actual short-, medium- and long-term societal costs rather than aiming to achieve theoretical market equilibrium solutions.

Given the large-scale shifts involved, analysis of the proportionality or necessity of government interventions will become far more data intensive. For long-lived infrastructure investments, this will require the examination of forward scenarios until 2030-2050 to ensure an accurate examination of lifetime costs and benefits under different scenarios of technology cost and demand.

For example, public support to build ‘oversized’ North Sea grid interconnections may look appropriate under a scenario where offshore wind costs are low, but will prove inefficient if wind costs remain high and solar power proves cheaper. It could also be argued that this particular project distorts the ability of CCS to compete in this region. Should the solution be to give subsidies to CCS pipelines or to withdraw support for grid interconnections, a move which would raise energy security concerns in some demand scenarios?

In the context of complex and long-term investments the European Commission is not equipped with the necessary analytical tools to fully assess the implications of different long-term infrastruc-

ture investments under high levels of technological uncertainty. It should thus be beyond the authority of the state aid process to make a judgement on the trade-off between short-term costs and long-term value, including risk reduction and enhanced security of supply. Risk managing the complex interactions between multiple investment and technological systems that have profound implications for cost and economic security is best achieved by democratic decision-makers at the national and sub-regional level.

In these complex cases, countries can be prevented from abusing state aid by requiring stronger pre-communication of national plans for infrastructure, energy supply, demand reduction etc. Countries should have to show that specific measures fit into a coherent and empirically-grounded strategy that is consistent with their EU obligations and national goals. Countries are already required to produce these types of strategy in many areas; Energy Efficiency Action Plans, for example, set out strategies for delivering the 20% by 2020 EU energy efficiency goal.

How is state aid verified?

Notification – Member States must notify the European Commission of new aid measures and must wait for the Commission’s decision before they can put these measures into effect. There are a few exceptions to this mandatory notification, notably for:

- aid covered by a **Block Exemption**, which gives automatic approval for a range of pre-defined aid measures deemed by the Commission to be less distortive of competition. Such exemptions are defined as Block Exemption Regulations, and currently cover some 26 areas including regional, SME and environmental aid.
- ‘de minimis’ aid not exceeding €200,000 per undertaking over a period of three fiscal years.
- aid granted under an aid scheme already authorised by the Commission.

Is it state aid? – Once notified, the Commission must then assess whether the aid measure is indeed state aid. A measure is state aid if it fulfils all of the following criteria:

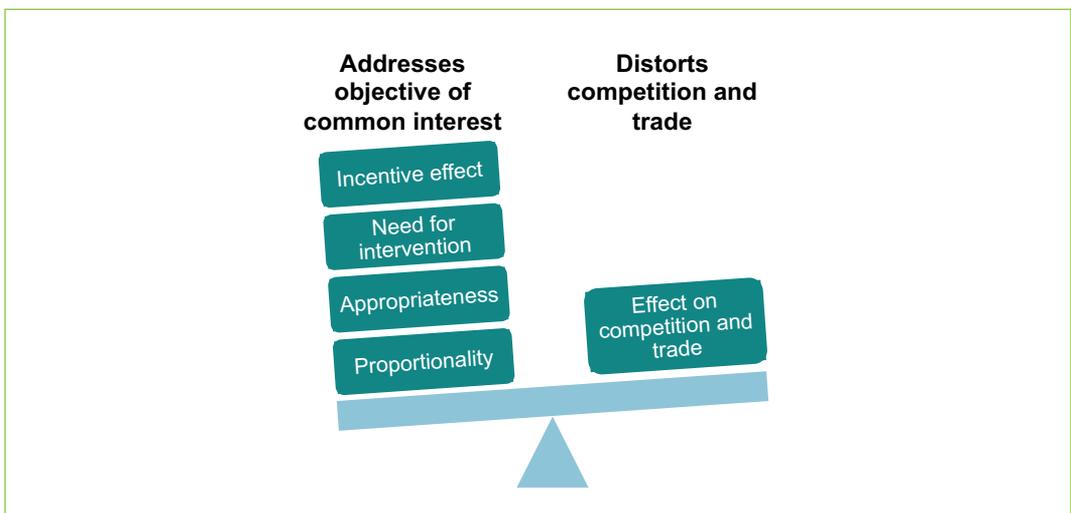
- it is granted by the state or through state resources;
- it is selective, and provides an advantage;
- it distorts, or threatens to distort competition;
- it may affect trade between Member States.

If the measure is not considered to be state aid, it may be implemented. If the measure is indeed state aid, the Commission must then assess whether it is compatible with EU rules.

Can it be exempted? – State aid can be considered compatible with the internal market provided it promotes legitimate policy objectives, and that its benefit outweighs any distortion of competition. The European Commission assesses the compatibility of aid with the common market through a ‘balancing test’ (Figure 2):

- **Objective:** is the aid measure aimed at a well-defined objective of common interest?
- **Need for state intervention:** is the proposed aid targeted towards remedying an existing and well-defined market failure?
- **Appropriateness:** is the aid an appropriate policy instrument to address the objective of common interest?
- **Incentive effect:** does the aid engage the recipients in additional activity they would not otherwise carry out, or would only carry out in a restricted manner?
- **Proportionality:** is the aid measure proportional to the problem to be tackled? Is the aid amount limited to the minimum needed to achieve the results sought?
- **Effect on competition and trade:** are the distortions of competition and effect on trade sufficiently limited that the overall balance is positive?

Figure 2: ‘Balancing test’ to assess the compatibility of a state aid measure with the internal market



Source: E3G

2.2 Aligning the State Aid Review with Efficient Transformation Policies

What is State Aid Modernisation?

The European Commission began a programme of reform in May 2012 in order to ensure that state aid control helps public authorities make efficient use of scarce public resources and focus their spending on growth-enhancing policies while limiting competition distortions. This ambitious reform package, dubbed 'State Aid Modernisation', set out the following objectives:

- To foster growth in a strengthened, dynamic and competitive internal market – to this end state aid control should support the flagship initiatives of the Europe 2020 strategy and discourage aid that does not bring real added-value.
- To focus enforcement on cases with the biggest impact on the internal market – this includes more intensive scrutiny of large and potentially distortive aid, as well as simplification of the regime for cases with limited effect on trade, especially through the general block exemption regulation (GBER).
- To streamline rules and enable faster decision-making – to ensure that decisions are delivered with 'business-relevant' timelines.

This suggests a general approach of greater emphasis on 'pre-notification' of measures and more 'ex-post' assessment of compliance and enforcement cooperation with Member States. The main elements of the reform were due to enter into force by the end of 2013.

State Aid Modernisation timeline – with particular relevance for the energy and environment sectors

- May 2012: European Commission's communication on State Aid Modernisation
The communication sets out the objectives of the reform.
- Jun-Sep 2012: Consultation on the review of the General Block Exemption Regulation (GBER)
The consultation invites stakeholders to suggest amendments to the existing GBER provisions.
- Jul-Oct 2012: Consultation on state aid for environmental protection
The consultation addresses possible amendments to the Community Guidelines on State aid for environmental protection and environmental support measures in the GBER.
- Jan 2013: European Parliament adopts a resolution on SAM
The European Parliament broadly supports the Commission's objectives, with some reserves.
- Mar 2013: Commission issues paper on state aid for environmental protection, and consultation
Outlines the main considerations for the review of the guidelines and relevant parts of the GBER.
- May-Jun 2013: Consultation on draft GBER
Collects views on the draft GBER, which includes new features for aid for environmental protection.

Initially planned Summer 2013: DG COMP to consult on draft EEAG.

Initially planned By end 2013: Third consultation on the draft GBER to take place by end of 2013.

Planned Early 2014: Adoption of new EEAG.

Within the overall state aid modernisation process, the separate review of the EEAG focuses on five primary areas where existing rules cannot keep up with shifting policy and market developments¹³:

- Harmonisation and simplification of rules, in particular the General Block Exemption Regulation.
- Inclusion of energy infrastructure.
- Issues of system stability and generation adequacy.
- Support to low-carbon energy sources.
- Exemptions from environmental taxes and other charges on electricity consumption.

The Green Paper on EEAG contained ideas and proposals on the principles and approaches by which future state aid cases may be assessed in each of these areas. These proposals form the basis for the analysis in this report.

As suggested in the Green Paper, the level of scrutiny over state aid interventions should be better aligned with the potential scale of market distortions and costs to consumers. This would suggest that measures in areas with well-documented market failures and potential for cost-effective investment (e.g. energy and resource efficiency) should receive relatively lower levels of scrutiny and wider exemptions. This logic should also extend to strategic infrastructure such as electricity grids and storage which enhance competition in the long term, enable market coupling, and allow for enhanced use of renewable energy.

Though the prescriptive nature of state aid rules should be lessened in some areas, these disciplines do have a vital role to play in delivering transformation by ensuring open markets and competition. The scale and speed of the transformation required in Europe will disrupt many incumbent companies and business models, some of which are locked into existing support schemes and regulations. For example, 'supplier obligations' to deliver energy efficiency can reduce the ability of new market entrants to com-

pete. Regulations on electricity distribution and supply make it very hard for businesses based on 'smart technologies' to develop viable markets¹⁴. The structure of current construction markets makes it very hard to provide incentives for innovative low-resource use and low-embedded-carbon designs and products. Targeted incentives in energy-intensive industries, and conditionality on government infrastructure and building procurement, could make an important contribution to driving innovation in these markets.

State aid exception processes will be vital in helping overcome resistant and restrictive regulations and in the creation of efficient new markets for demand reduction, smart technologies and cross-border co-operation. For example, a new 'equal value of demand savings' principle could be established that requires all government interventions seeking state aid exception to demonstrate that demand- and supply-side solutions to delivering the relevant service will compete on a level playing field. This principle could be incorporated into the revised EEAG by explicitly requiring electricity capacity mechanisms to actively and equally support demand reduction, demand management, smart grids and storage solutions.

State aid approval processes could also take a more pro-active approach to examining measures which give support to inefficient incumbents and to all support given to fossil fuel and resource-intensive sectors. Extensive analysis by the OECD, the IEA and European Commission shows a large range of continuing measures which undermine European policy goals and market efficiency by supporting the production or consumption of fossil fuels through budgetary support and tax expenditures¹⁵.

This would be part of a broader trend to strengthen ex-post investigation of support schemes (including those for low-carbon and resilient investment) to avoid abuse by assessing whether they are compliant with basic state aid disciplines including non-discrimination.

13 http://ec.europa.eu/competition/state_aid/legislation/environmental_aid_issues_paper_en.pdf

14 For a discussion of demand side market evolution and barriers see E3G and GE's report *on Creating new electricity markets in Europe to meet energy policy challenges*, April 2013.

15 For example see country-specific accounts of existing budgetary support and tax expenditures relating to fossil fuels in OECD countries at <http://www.oecd.org/site/tadffss/>

What is Europe 2020?

*'Europe 2020 is the EU's growth strategy for the coming decade. In a changing world, we want the EU to become a **smart, sustainable and inclusive economy**. [...] Concretely, the Union has set **five ambitious objectives – on employment, innovation, education, social inclusion and climate/energy – to be reached by 2020.**'*

José Manuel Barroso, President of the European Commission

The Europe 2020 strategy, adopted in March 2010, is about overcoming the economic crisis whilst addressing the shortcomings of the EU's growth model. To ensure smart, sustainable and inclusive growth, the strategy includes seven flagship initiatives – innovation, the digital economy, employment, youth, industrial policy, poverty and resource efficiency – which provide a framework to support the EU's top priorities for this decade. More specifically, Europe 2020 includes the following targets:

- increase the employment rate to 75%;
- improve energy efficiency by 20%, increase the share of renewable energy to 20%, and reduce greenhouse gas emissions by 20% compared to 1990;
- invest 3% of GDP in research and development;
- reduce the number of school dropouts to under 10% and ensure that at least 40% of 30-34-year-olds have a higher education;
- ensure 20m fewer people are at risk of poverty or social exclusion.

Such challenges will require greater coordination of national and European policy through the 'European Semester' – a yearly cycle of economic policy coordination between European institutions and Member States – and supported by the EU budget, which focuses on economic growth more than ever.

Figure 3: The European Semester in a graph



Source: European Commission

For more information, go to http://ec.europa.eu/europe2020/index_en.htm

3. Recommendations for the Review of State Aid Environment and Energy Guidelines

Support

3.1 Key Principles and Objectives for the EEAG

The review of the guidelines should incorporate the following **core principles** which are central to aligning state aid disciplines with an efficient transformation to a low-carbon¹⁶, resource-efficient and resilient economy:

■ **Resilience:** A general provision to identify economic resilience and risk reduction as areas of common interest which can be given as reasons for government intervention.

■ **Lowest Cost:** the principle that lower societal cost can be a justification for approval of state aid even when this involves increased government intervention in markets.

■ **Equal Value for Demand Reduction:** support schemes must be designed to equally reward reductions in demand as well as increase in supply as these are often more cost effective.

■ **Long-term:** the principle that proportionality of costs and benefits should be considered over the long term with analysis up to 2030-50 for long-term infrastructure investments.

¹⁶ The paper uses the term 'low-carbon' Europe to refer to the over 95% reductions in EU GHG emissions needed beyond 2050 to be consistent with the EU goal of maintaining global average temperatures below 2C. This term does not imply the potential use of specific supply technologies – such as nuclear energy, CCS or large scale biomass – in achieving this goal but is a description of the necessary end state for the European economy.

The EEAG review should aim to achieve the following **key objectives** to better align the EEAG recommendations with the broader state aid modernisation process:

- Focus on simplifying rules and grant exemptions in areas with pervasive market failures.
- Use state aid to address missing markets and excessive market concentration in most national markets, and stimulate higher levels of competition and innovation.
- Ensure government support does not flow to fossil fuel investments, which lock-in high future costs and foster economic vulnerability.
- Create limited exemptions and incentives for countries to transition their energy-intensive industries into the low-carbon future.

Recommendations are given below for detailed changes to the draft guidance in three areas: lowering the costs of decarbonisation and resilience; driving liberalisation and new market growth; ensuring low-carbon investment flows.

3.2 Lowering the Costs of Decarbonisation and Resilience

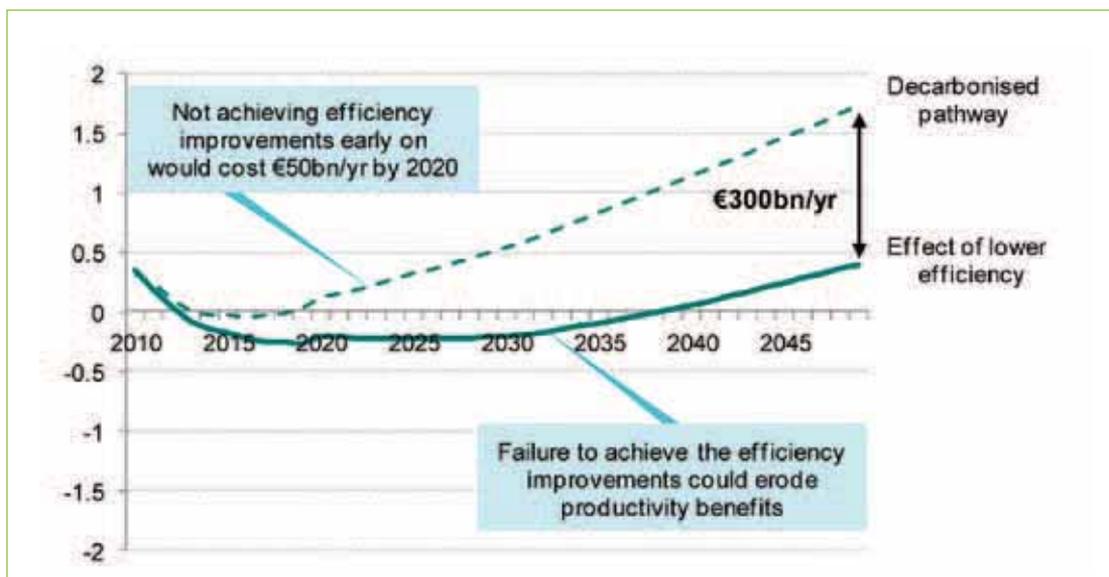
Recommendation 1

Energy Efficiency in Buildings

Opportunity: Energy efficiency markets suffer from multiple well-known and quantified market failures which increase consumer bills and reduce European competitiveness. Effective exploitation of cost-effective energy efficiency potential in European buildings could save over €50 billion per year (Figure 4). Annual investment required to reach the Europe 2020 efficiency goals is estimated to be between €35-65 billion but is currently not on track to be delivered.

Analysis: Experience from existing programmes in UK, Germany, France and elsewhere shows that significant public funding and support is needed to motivate the necessary level of retrofitting with successful schemes requiring 20-40% upfront public support. Although some of this is related to tackling fuel poverty issues and poorer consumers. Countries have experienced problems receiving state aid clearance for larger schemes and delays where schemes have been combined with other social support programmes.

Figure 4: Cost to the European economy of non-delivery of energy efficiency; GDP difference from the baseline (% pt)



Recommendation: Create a Block Exemption for all energy efficiency schemes of which the European Commission is notified as part of Member States' Energy Efficiency Action Plans. Potential abuse of the Energy Efficiency block exemption should be monitored via stronger ex-post enforcement procedures.

Recommendation 2

Technology-Specific Support for Renewable Energy Technologies

Opportunity: All analysis shows that Europe's decarbonisation path will require a continued rise in the use of renewable energy technologies as countries decarbonise their power sector. Investment of €35-45bn/yr will be needed by 2020 to meet EU renewables targets. However, given varying levels of maturity between technologies and differing national circumstances, analysis suggests that technology-neutral and/or price-driven instruments are not always efficient and may in fact result in large costs and risks to consumers. Countries must retain the ability to use the lowest-cost mix of price and technology-specific instruments which are designed around their national circumstances.

Analysis: A single Europe-wide carbon price is not sufficient to drive the investment necessary to decarbonise national power sectors and maintain security of supply. The carbon price needed to drive efficient decarbonisation trajectories at national levels varies widely due to differences in countries' decarbonisation ambition levels, the age of installed infrastructure and the availability of renewable resources. Even at the national level a single technology-neutral carbon price is not always an efficient instrument to drive investment even in mature technologies as price-driven instruments often produce windfall profits for existing generators and may drive excessive use of gas to meet short-term CO₂ targets. Price-driven scenarios have also been shown to be less resilient to demand, technology and price shocks in a range of European countries (*Figure 5*). Achieving a least-cost outcome requires active national risk management of the transition to a decarbonised power sector, which includes using technolo-

gy-specific instruments to ensure a steady stream of renewable energy investment¹⁷.

Recommendation: The state aid guidelines should not attempt to specify a preference for use of either price or technology-support mechanisms. The guidelines should include a presumption of state aid compatibility for renewable energy support incentives which have been included as part of a least-cost, long-term national decarbonisation strategy.

Considerations of the state aid compatibility of renewable energy support schemes should not be based on broad approaches such as 'technology-neutrality' but must take into consideration the legitimate objective of ensuring acceptable levels of price stability under different decarbonisation, demand, technology availability and fuel price scenarios.

Recommendation 3

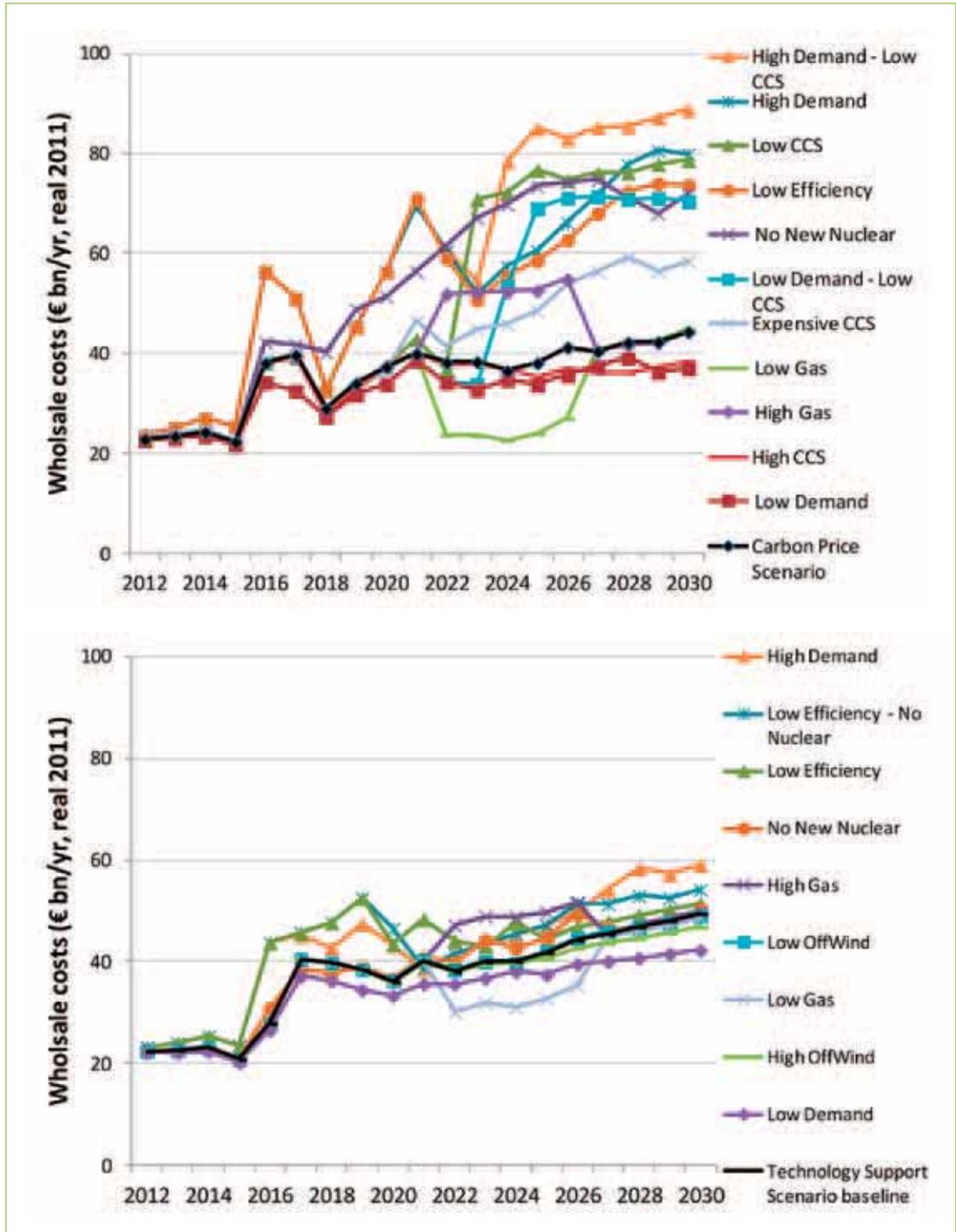
Support for Transformational Resource Efficiency

Opportunity: Europe faces economic impacts from volatile resource prices and availability as well as rising resource importation costs. With continuing growth in emerging economies and the impacts of climate change these stresses will rise. Incentives to promote more efficient use of resources in production and consumption are critical to improve economic efficiency and resilience to future trends.

Analysis: Delivering more resource efficient approaches often requires systemic change in the provision of goods and services; for example, to reduce material and water use through design, material substitution and service redefinition. To avoid future exposure to high costs, resource-efficient alternatives and substitutes need to be incentivised by creating market demand through direct public purchasing incentives, tax preferences and public support to transformational investments. These demand-creation support mechanisms may require state aid clearance as they will create preferences for specific sub-sections of markets and may not be open to all companies in the early phases.

¹⁷ For detailed analysis of these dynamics in the UK, Germany and Poland see E3G's series of reports on Risk-managing European power sector decarbonisation, 2013.

Figure 5: Wholesale electricity costs under a gas-heavy (left) and renewables-heavy (right) system under a range of sensitivities, Great Britain, 2012-2030 (€bn)



Source: E3G/ Baringa 'Risk managing power sector decarbonisation in the UK', 2012

Recommendation: Include a new rule that support to resource-intensive industries will only generally be considered where this is clearly situated within a National Policy or Plan for addressing long-term economic risks from exposure to volatility to resource prices and supply.

These exemptions would only be available to interventions supporting very large reductions in resource usage for any particular activity (for example, above 50%) and the underlying plan would need to contain clear analysis of the future national economic impacts which these interventions aim to tackle.

3.3 Driving Liberalisation and New Market Growth

Recommendation 4

Electricity Grid Investment for Clean Energy

Opportunity: The European electricity system is under-connected, creating higher-than-necessary costs for consumers. Delivering an optimal European grid would increase competition and allow the cheapest European renewable energy resources to be shared and could save consumers €426 billion by 2030¹⁸.

Analysis: The European power system is under-connected due to restrictions on national market entry, incumbent power, planning difficulties and incentives on regulators that undervalue interconnection and strategic infrastructure. Many of these problems have been remedied by the Third Energy Package and the Energy Infrastructure Regulation (for example, unbundling and benefit-sharing rules) but problems remain in developing an optimal grid and an interconnected, competitive market. Estimates suggest that €180 billion will be needed for these investments by 2020 and far more beyond that.

Most transmission lines are regulated assets but the state aid Green Paper suggests moving to a presumption of market funding for infrastructure. However, there are currently weak incentives for the major investments needed to integrate large-scale renewable energy into the grid to meet the EU's 2030 Roadmap goals. Investments will often

only see a return over 10-30 years and – given uncertainty over future clean technology costs and thus the optimal energy mix and location across Europe – securing commercial returns will be very risky. Recent analysis of transmission companies suggests that their balance sheets are also unable to support the scale of investment needed. Given long time scales and future uncertainties it will often be an optimal cost-reduction strategy to build extra capacity into some lines in order to facilitate access to potentially cheaper clean energy in the medium to long term (2025-2045). These investments will need to be approved in the next 5-10 years given the time needed to construct major grid infrastructure. Public support measures – including loans, project bonds, grants and risk-sharing instruments – are being proposed across Europe to overcome these problems but risk being ruled out by overly-prescriptive application of state aid rules.

In contrast, some countries may aim to undermine EU decarbonisation objectives by importing high-carbon coal power from outside the area controlled by the EU ETS. This will create market distortions and undermine the EU common interest in reducing carbon emissions and should be explicitly ineligible for state aid support.

Recommendation: Explicit presumption of state aid compatibility should be given for interconnection investments designed to access renewable energy resources and improve grid stability under higher renewable energy scenarios. The proportionality of intervention should be considered by analysing the impact of investments in a range of decarbonisation and technology scenarios up to 2050.

Clear presumption against any state aid support for investment in electricity infrastructure aimed at accessing coal power resources from outside the EU ETS regulated zone.

Recommendation 5

Electricity Demand-Side Markets

Opportunity: Power system operators must balance supply and demand of electricity at all times in order to maintain a stable and reliable supply for system users. Historically, the continuous balance was mainly ensured through variations in supply

18 See Roadmap 2050, European Climate Foundation, 2010 <http://www.roadmap2050.eu/>

while electricity users were considered passive players. New consumption patterns, the development of regional markets, as well as the availability of new technologies such as smart meters, storage and demand management systems, however, are allowing for more flexible approaches to matching supply and demand in the future. The European Commission assesses the 'potential of the demand side response at the Union scale [to be] enormous', potentially reducing 'approximately 10% of EU's peak demand'¹⁹. It also recognises that the demand side in markets is 'currently underutilised'.

Traditional electricity markets have not valued demand reduction and flexibility as a way of managing system stability and reducing costs. Estimates suggest that even moderate exploitation of demand response opportunities could save 7% of system costs across Europe by 2030, and even partial exploitation of the potential for cost-effective electricity savings could save 14% of system costs in the same period²⁰.

Analysis: The creation of effective demand-side markets has been blocked by a combination of regulatory and market failures. Regulators have traditionally looked to electricity suppliers to provide system stability services by paying for flexible and additional generation. These markets have generally not been open or been too risky for most companies who could reduce demand or to suppliers from other countries. By contrast, systems to promote cost-effective demand response and storage are common in the US on both liberalised and regulated systems. Many EU countries are developing new capacity market mechanisms in response to the extra demands placed on system stability by greater penetration of intermittent renewable energy sources. These mechanisms will be subject to state aid approval and it is critical that these *fairly and equally* incentivise the most cost-effective provision from supply side, demand response, demand reduction and storage providers. This will require specific instruments which fit with the business models of demand-side providers and cannot be left to a 'one-size-fits-all' approach designed around incumbent supply-side providers.

Given the immaturity of markets and some technologies in these areas, countries should be able to provide similar market creation and technology

incentives as previously used on the supply side, such as energy efficiency feed-in tariffs and capital and supply chain support grants in these areas.

Recommendation: Implement the recommendation in the Green Paper that approval of capacity market mechanisms be dependent on full incorporation of demand response, demand reduction and interconnection on a fair and equal basis, including through specific instruments to support market development.

State aid rules should recognise the immaturity of demand-side sectors by signalling the compatibility of a range of state support measures needed to establish new markets and bring technologies down the cost curve.

Recommendation 6

Support for Transformation and Transition in Carbon-Intensive Sectors

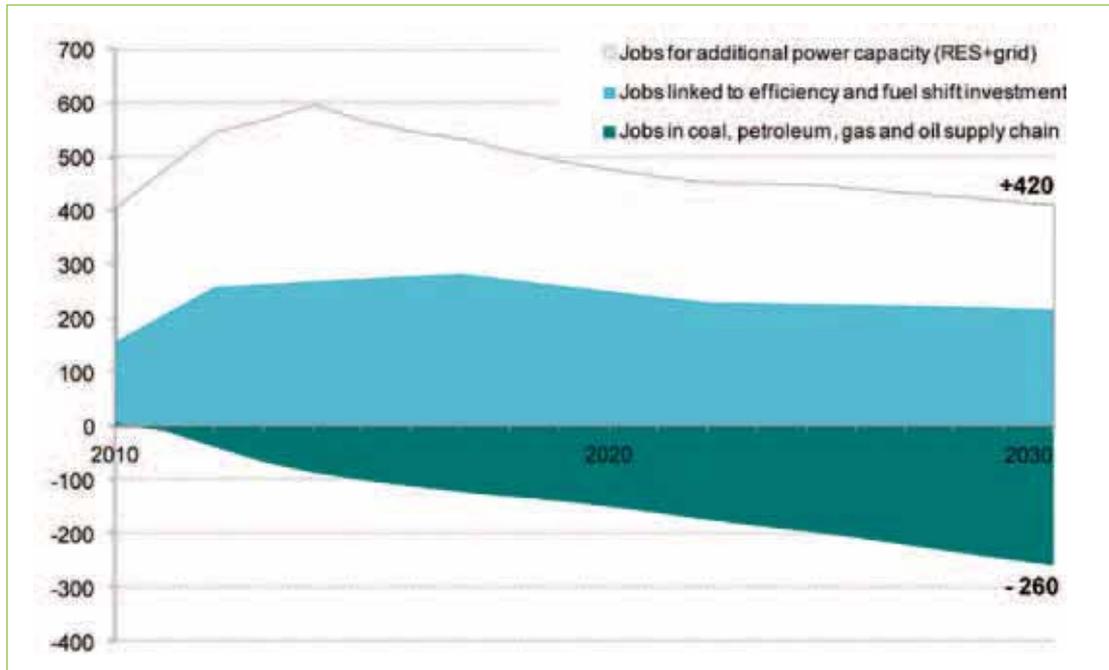
Opportunity: There is a need for active policy to manage the social impacts of transition, drive innovation in high-carbon sectors and to maximise the industrial benefits gained by EU companies exporting into the €4 trillion low-carbon global market for low-carbon goods and services. While the transformation to a low-carbon and resilient economy will generate jobs, several hundred thousand jobs will be lost in fossil fuel sectors (see *Figure 6*). Energy-intensive sectors (steel, cement, chemicals, glass etc.) will see rising demand as the economy becomes capital intensive, but will need to transform themselves into low-carbon producers. These companies fear that they will lose market share during the transition through competition with countries with low energy costs.

Analysis: To date, competition concerns have meant that energy-intensive industries have generally been fully or partially exempt from most carbon pricing schemes at national or EU level. These exemptions are overly-generous as analysis suggests that competitive pressures are relatively small in most sectors (except, aluminium, steel, refineries and some chemicals)²¹. Moreover, exemptions have restricted the level of technological innovation

19 *Delivering the internal electricity market and making the most of public intervention*, European Commission, November 2013.

20 See Roadmap 2050, European Climate Foundation, 2010 <http://www.roadmap2050.eu/>

21 See Climate Strategies' *Carbon pricing and its future role for energy-intensive industries*, March 2013.

Figure 6: Job variations as a result of decarbonisation in different sectors (in '000s)

Source: Oxford Economics, European Climate Foundation (2011)

in these sectors, and removed incentives for alternatives and substitutes to energy-intensive products down the supply chain. For example, replacing reinforced concrete with engineered timber and reducing high-carbon material use through more sophisticated design methodologies.

Countries will continue to apply exemptions and support funding to these industries over the coming decades. There is also a legitimate need to manage the social costs of transition away from high-carbon companies which will not be able survive and adapt in a low-carbon world.

State aid disciplines should ensure that transition support is not being used to prop up unsustainable industries or delay the transition to low-carbon processes, which increases costs to citizens and consumers by requiring more expensive reductions elsewhere in the economy.

However, well-targeted incentives which stimulate transformational changes in products, processes and services towards low-carbon and low-resource use should be allowed when implemented as part of an overall decarbonisation plan – rather than as ad hoc interventions. Only incentives for ambitious actions should be allowed and should be treated as

transitional innovation support similar to early renewable energy feed-in tariffs.

Recommendation: The guidelines should contain a general presumption against state support for high-carbon sectors and companies except for temporary social transition support or where this is part of an explicit long-term plan to incentivise low-carbon (excluding nuclear and carbon capture and storage) and resource-efficient products, processes and services.

3.4 Ensuring Low-carbon Investment Flows

Recommendation 7

Public Bank Support for Green Investment

Opportunity: The European low-carbon transition will require cumulative investments of €1.4-2 trillion by 2020²². Even without the financial crisis this would require a doubling of investment capacity in the power sector. Given the current collapse of long-term bank lending it is critical to

22 Financing the decarbonisation of European infrastructure, E3G, February 2012.

develop new and innovative financial structures – including public bank instruments – which can drive low-carbon investment at the least cost to the consumer and taxpayer (see Figure 7).

Analysis: Low-carbon investment has reduced despite major interventions by public banks such as EIB, KfW and the UK Green Investment Bank. Banks are consolidating their balance sheets and affordable long-term debt financing for infrastructure is not available in much of Europe. In addition, the policy, technology and novelty risks around many low-carbon investors have deterred institutional investors from making up this investment gap. The impact of financial regulation on institutional investors' ability to hold long-dated assets will further reduce the attractiveness of long-term investment in clean infrastructure.

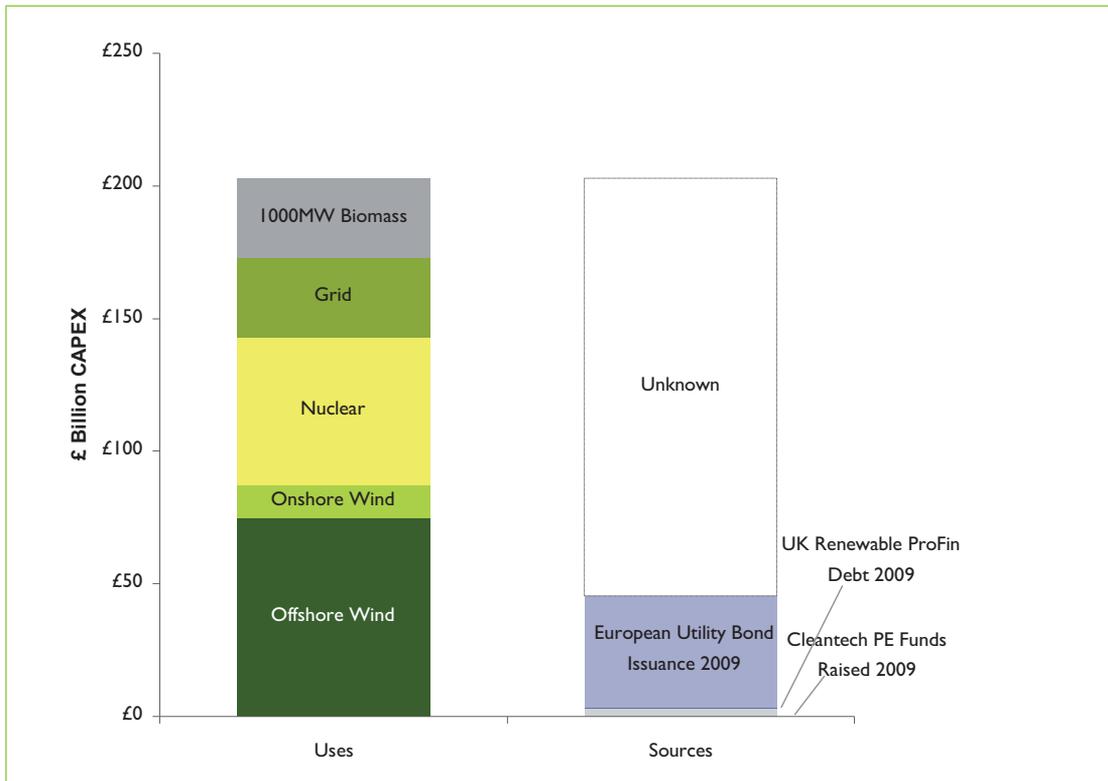
Governments have also realised that it is inefficient to pay a premium to private investors to offset their perception of policy risks around low-carbon investments (e.g. renewable energy in Spain). It is more cost efficient to cover these risks themselves through public risk instruments such as first lost debt or policy risk guarantees.

A wave of financial innovation is emerging to help overcome these problems including EU project bonds, the UK Green Investment Bank and discussions over a French green bank. However, current state aid rules are highly restrictive regarding these institutions and fail to recognise the legitimate cost savings governments can make by providing direct financing and risk guarantees. Requiring extensive 'proof' that public finance is not squeezing out the private sector is unnecessary as private sector leverage is the aim of these banks; especially in a time of austerity. State aid requirements on each financing product to demonstrate a lack of available private financing adds additional transaction costs and inefficiencies to the project pipeline and slows investment growth.

Recommendation: State aid exemption should be given to public financial institutions and products with a clear low-carbon purpose (excluding nuclear energy and carbon capture and storage), and supporting measures within a low-carbon development plan.

Delivery of lower-cost interventions should be a sufficient objective for a public financial instrument, even if private finance is available at a higher cost.

Figure 7: UK Low Carbon Infrastructure Investments for 2020 targets (£bn CAPEX)



4. Final recommendations

<p>Recommendation 1 Support to energy savings</p>	<ul style="list-style-type: none"> ■ Recognise energy efficiency schemes pre-assessed by the European Commission as part of the Member States' Energy Efficiency Action Plans as compatible with the internal market. ■ Monitor potential abuse through ex-post enforcement procedures.
<p>Recommendation 2 Support to renewables</p>	<ul style="list-style-type: none"> ■ Assess compatibility of renewable energy support schemes with the internal market considering the legitimate objectives of ensuring acceptable levels of price stability under uncertain decarbonisation, demand, technology availability and fuel price scenarios – rather than the blunt 'technology-neutrality' approach. ■ Include a presumption of compatibility for renewable energy support schemes of which the European Commission has been pre-notified as part of long-term national decarbonisation strategies.
<p>Recommendation 3 Support to transformational resource efficiency</p>	<ul style="list-style-type: none"> ■ Only allow support to resource-intensive industries when clearly defined within a national strategy for addressing long-term economic risks such as exposure to volatile resource prices. ■ Explicitly require that national strategy include a clear analysis of the future economic impacts of state interventions.
<p>Recommendation 4 Support to electricity grid infrastructure</p>	<ul style="list-style-type: none"> ■ Recognise grid stability under high renewable energy scenarios and access to renewable energy resources as objectives when assessing the compatibility of aid for infrastructure. ■ Assess the proportionality of aid to energy infrastructure considering long-term impacts under a range of decarbonisation and technology scenarios to 2050. ■ Prohibit any aid for electricity infrastructure aimed at accessing coal-fired power resources from outside of the EU.
<p>Recommendation 5 Electricity demand side markets</p>	<ul style="list-style-type: none"> ■ Make the approval of aid to capacity mechanisms conditional on a guarantee of fair treatment of the demand-side within the mechanisms. ■ Recognise the need to develop new markets and bring technologies down the cost curve when assessing the compatibility of aid to demand response, demand management, storage and smart grids.
<p>Recommendation 6 Transition of carbon intensive sectors</p>	<p>Only allow aid to high-carbon sectors when intervening in support of temporary social transition, and when explicitly defined as part of a long-term decarbonisation plan.</p>
<p>Recommendation 7 Public bank support for green investment</p>	<p>Recognise 'delivery at lower cost to society' as an objective when assessing the compatibility of public financial institutions and instruments.</p>

About E3G

E3G is an independent, non-profit European organisation operating in the public interest to accelerate the global transition to sustainable development. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. More information is available at www.e3g.org

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The transition to a low-carbon and resource-efficient economy will involve major increases in investment, rapid innovation and the creation of new markets across Europe over the next decade. The level of investment that will be required in the energy sector, for example, is predicted to double. To make this transition succeed, it requires a rethinking of state aid rules, which detail when Member States may grant assistance to selected undertakings.



This report, authored by the think-tank E3G for the Greens/EFA Group in the European Parliament, provides a critique of the current state aid rules. Of concern in particular is the distorting effect of state aid subsidies to fossil fuel industries, which are in clear conflict with the EU's stated goal of moving towards a low-carbon economy. The current arrangements also do not ensure a level-playing field for different industries across Europe.

To overcome this impasse, the authors put forward a number of recommendations, focussing on the three core objectives of lowering the cost of decarbonisation, driving new market growth and ensuring low-carbon investment. The report details a number of principles that must underpin reforms of state aid rules, such as flexibility and the need to provide the greatest possible savings to consumers. If adopted, such measures will allow Member States to play a role that supports the transition to a green economy and will place Europe at the centre for creating resource-efficient and low-carbon economies.



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