

A Green New Deal for Europe

Towards green modernization in the face of crisis

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Executive summary

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After the financial and economic crisis of 2008 a number of governments around the world have made a powerful contribution to active economic policy-making by launching recovery packages. Most packages have green elements, sometimes of a considerable size. European recovery programmes are small in relative and absolute terms especially compared to Asian programmes, nevertheless we can expect globally a strong state-driven demand pushing green markets.

The real impacts of the green stimulus of recovery packages remain to be seen. Discussions about actual sizes, measures and even additional packages are often still ongoing. Comparing green shares of recovery programmes is often difficult, not the least because there is no general consensus about which measures are supposedly green. This is one of the main reasons why Europe needs a clear vision of what a Green New Deal is all about.

Many studies and comments on the green share of recovery programmes focus on climate and energy issues, but a Green New Deal comprises – and should comprise – more than an answer to climate change. It needs to promote eco-industries with a clear vision of a green modernisation of the economy.

Based on the Eurostat/OECD definition of eco-industries we define a Green New Deal as a targeted state investment in activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. This includes innovation in cleaner technologies, products and services that reduce environmental risk and minimise pollution and resource use.

In the EU, eco-industries already generate a considerable turnover and employment. Different studies confirm excellent potentials for further growth. They also show an uneven distribution in the EU. Therefore, successful innovation and industry policies of the market front-runners could be a model for active diffusion of eco-innovation in all EU Member States.

Support for eco-industries is not enough, because even green economic growth can be harmful, if it merely contributes to increase an already unsustainable high level of natural resource consumption. Thus, a Green New Deal needs to be more than a technology platform for eco-industries. It has to be guided by a vision of how a green modernization of industry should look like in the long run. A Green New Deal requires structural change on all policy levels fulfilling three functions; it should:

1. Break-up unsustainable structures
2. Build-up sustainable structures
3. Give the right mid- to long-term orientation

A Green New Deal should meet these functions on a strategic level, on the level of individual EU policies and on programming level.

Strategies

On a strategic level there is a lack of a long-term guiding vision of sustainable production and consumption patterns beyond low carbon. The green parts of the Lisbon Strategy in combination with the Sustainable Development Strategy contain elements which could be used as central building blocks of such a vision. In particular, the huge gap in energy and material productivity between Member States in the EU (up to a factor of 8!) should become the central challenge for guiding (eco-innovation) policies. This requires support for efficiency front-runners and a technological leapfrogging in regions with low resource productivity. This would enable the EU to harvest a double-dividend of decreased pressure on the environment (including CO₂ emissions) and increased competitiveness due to the reduction of production costs. Thus the EU would set course on a development path, which would eventually lead towards consumption and production patterns respecting ecological boundaries in Europe and beyond.

Policies

Major EU policies could boost resource efficiency of EU industries and infrastructure by combining EU and national funds. In particular, with the Cohesion Policy the European Union has a funding system dedicated to structural change which is already operating in the same order of magnitude as the green stimulus of European recovery programmes. By combining national recovery programmes with EU Regional Funds the EU Member States could create the necessary financial leverage to change production and consumption patterns especially in regions which are lagging behind. For this purpose the European Parliament could initiate special fast-track financing mechanisms. Such a mechanism would grant "green light" for green structural interventions to increase resource productivity of industry and infrastructure monitored by EU Structural Indicators on energy and materials productivity.

Programmes

Short-term Community support for a Green New Deal could be followed-up by more consolidated medium-term action of integrating the necessary components of an appropriate policy mix. This could be achieved by improvements on the programming level. The EU has a number of sophisticated innovation programmes, which are already contributing to a greening of the EU economy (e.g. ETAP, CIP). Different EU programmes affecting eco-innovation would have to converge and should be strengthened with Cohesion Funds for improving overall resource productivity (energy and materials). Integrated schemes for using RTD, innovation and regional development programmes could be the financial foundation for developing on a European and regional level a "triple-helix" consisting of stakeholders from enterprises, the public sector, research and teaching who could drive and create a self-sustaining market for improving resource efficiency in the European Union.

Priority areas for the development of regional transformation could be sustainable mobility, as well as energy and material efficiency.

Sustainable Mobility

The improvement of sustainability of transportation is not only a key challenge in fighting climate change and other environmental problems. As an important sector in modern economies, more efficient and sustainable transport systems contribute to economic growth. Thus, integration of sustainable transport investments in European recovery plans can provide important stimuli for economic growth and employment.

Regarding political strategies and social and economic conditions, freight and passenger transport are quite different, as well as earthbound and plane or ship transport. Thus, this paper exemplarily concentrates on describing problems and solutions in the field of earthbound passenger transport.

A sustainable policy for passenger transport should focus on three basic strategies:

1. Avoiding of transport,
2. Modal shift to more sustainable modes of transport and
3. Increase of efficiency of vehicles and the traffic flow.

With respect to the sustainability of measures, a hierarchy of these three strategies can be introduced.

Avoidance of transport is a top priority, as it allows maintaining mobility while reducing the kilometres travelled. This notion of mobility is defined by the possibility to achieve different human activities such as business, work, purchase, leisure and other social and cultural activities. Therefore, an integrated policy of transport and spacial development is necessary which require a long-term development. Thus, they are not in the focus of a recovery package that concentrates on quick effects.

A second strategic aspect of sustainable mobility is about the way in which the remaining transport needs are satisfied. The different **modes of earthbound transport** – walking, cycling, busses, trains and cars – have different environmental advantages and disadvantages. It is reasonable to support zero-emission mobility on short distances and train and public transport by bus or tram on medium range or longer distances. This includes the provision of infrastructure and its interconnection to promote intermodality, the purchase of vehicles as well as mobility management, measures of information, education and service. They act as pull-factors for a modal shift. On the other hand, push factors should be introduced: speed limits, low-emission-zones or congestion charges, eco-taxes on fuel and higher motor vehicle taxes for gas guzzlers are examples for measures that help levelling the uneven conditions for more sustainable modes of transport.

The third strategic pillar is the improvement of **transport efficiency**. This includes measures concerning vehicle technology as well as intelligent traffic management systems and eco-driving. Policy instruments on this field are e.g. emission limits, fiscal measures to integrate external costs of transport as well as R&D programmes; the latter two are possible parts of a Green New Deal.

In summary, the following possible elements of a Green New Deal can be identified:

- investments in new transport vehicles – busses, trams and regional trains
- investments in short-term realizable infrastructure for bicycle and pedestrians
- investments in infrastructure improvements for public transport
- investments in services to improve user-friendliness of public transport

- incentives for retrofitting of cars and vehicles of public transport
- fiscal measures to subsidise high efficiency vehicles
- research for energy efficiency technology
- marketing for more sustainable modes of transport
- education for eco-driving

Sustainable Energy Policy

As a premise, an EU Green New Deal has a greater long-term impact in emission reductions and employment if it is embedded in a coherent policy mix at EU, Member State and regional level.

Four main strategic fields can be identified:

1. *Energy performance of buildings (residential, tertiary, and industry buildings; existing buildings, new buildings, heating and cooling, incl. use of renewable energies, smart metering)*

In the building sector, an additional consultancy scheme should issue service vouchers for house-owners and SMEs. Additional direct grants for retrofitting existing building should promote renewable energies and high energy efficiency standards. Additional pilot projects for passive or zero emission houses need to be launched to improve performance standards of the existing stock of buildings. Intelligent combinations of high energy performance standards of the building envelope and renewable energies are required to significantly reduce energy consumption and emissions from the building sector. A Green New Deal should support cities and regions to develop zero-emission quarters or zero emission cities. For new buildings, energy-plus-houses provide an example for new buildings standards in general. The integration of low emission strategies in new buildings with resource efficiency requires further external financial support (e.g. BREEAM, CASBEE, Effinergie, DGNB and LEED). Supporting the reduction the energy consumption of heating and air-conditioning systems is another contribution to significantly reduce emissions. Old and inefficient heating systems need to be replaced or technically modernised. Energy efficient motor technology, for example, can significantly reduce electricity consumption for circulation pumps and fans up to 80%. In order to accelerate the modernisation and optimisation of heating and air-conditioning systems.

2. *Energy use of electrical appliances*

The market penetration of efficient appliances is still at a very low level. Also the reduction of stand-by and on-mode consumption of office, communication, and entertainment appliances shall be subject of further supportive measures. The following measures are recommended:

- Supporting programmes for the most energy efficient white appliances
- Supporting programmes for office, communication, and entertainment appliances without stand-by and with low on-mode consumption

3. *Emissions in industrial processes*

An EU Green New Deal should support the combination of voluntary agreements with financial incentives (e.g. tax deductions). A combination of free or subsidised energy audits (consultancy and audit vouchers), regional and/or sectoral networks and sectoral energy concepts (as, e.g., in North Rhine-Westphalia), energy services, and targeted financial support programmes to promote end-use, e.g., in the sectoral networks or concepts appears to be the most successful policy-mix for stimulating energy efficiency.

4. *Electricity Grids and Smart Metering in the EU*

Recent EU regulation, especially the Directive on energy end-use efficiency and energy services (ESD) has clearly emphasised the role of smart metering systems. A European Green New Deal should supporting the development and implementation of smart metering systems in order to

- create awareness of consumers for energy consumption, energy costs and greenhouse gases emissions
- motivate consumers to monitor energy consumption and to take additional action
- decrease the running costs of metering and billing
- create the technical basis for managing peak demand and integration of renewable energy sources.

Diffusion of smart-metering systems also requires a flexible European electricity grid. The structure of the European grid needs to be adapted to general developments in the energy supply market, the integration of decentralised renewable large supply systems, the integration of large-scale offshore wind and concentrated solar power plants. Only innovative and smart grid technologies will be able to manage these strategic challenges and address further energy conservation potentials. Additional funding should focus on EU-wide distribution and transmission infrastructure.

Sustainable Resource Management

Europe highly depends on a broad variety of other resources from domestic sources as well from other parts of the world. Rising global demand from emerging economies will raise resource prices and increase the risk of limited access to resources. Therefore, a strong economic argument for resource efficiency is a high cost reduction potential with two major effects: Improved competitiveness and job creation. Resource productivity could therefore be a core element of a Green New Deal which could not only lead to short term effects but an overall stronger economy.

Official Eurostat reporting reveals a large development gap among EU Member States concerning resource efficiency. The EU could realize considerable environmental and competitive advantages, if it systematically addresses the internal resource productivity gap. This would entail the promotion of existing resource policies of the frontrunners and leapfrogging strategies for regions which are lagging behind.

In a long-term perspective resource efficiency has to be embedded in a more comprehensive vision of a sustainable metabolism of the EU. A sustainable metabolism may be characterised by four paradigmatic and complementary perspectives:

1. a resource-efficient and recycling-based industry,
2. the steady stocks society,
3. a solarised technosphere and
4. a balanced bio-economy which develops even further towards a bionomy.

On a pragmatic and short-term basis there are five core objectives for the first paradigm of a resource-efficient and recycling-based industry:

1. Sustainable markets of the future
2. Strong institutions
3. Resource efficient products and services
4. The Government as consumer – role model and market power
5. Change in peoples' heads

For a short term impact on economic development and job creation the combined introduction of a European Resource Efficiency Agency (EREA) and the establishment of national Resource Efficiency Funds (REF) could be an adequate strategy of the Green New Deal

The EREA would initiate international cooperation and communication to raise awareness in Member States and industry in order to stimulate demand for consultancy services. Awareness of cost-reduction potentials among decision-makers in industry would lead to an increased demand for specific resource efficiency technologies, products and services. The desired long-term effect would be a self-sustaining competition for meeting cost-advantages of resource efficiency in the EU's manufacturing industry.

The national Resource Efficiency Funds would finance resource efficiency especially in SMEs, which often lack sufficient capital and expertise for resource efficiency measures. The national REFs could co-finance EU Regional Funds.

Resource efficient public procurement could be an additional instrument to support directly resource efficiency. Public institutions should start to improve procurement procedures and assets by investing in resource efficient products and services.