

# EUROPEAN POLICY BRIEF



## New industrial policy for more inclusive and sustainable growth

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## INTRODUCTION

### Objectives of the research

Achieving a path of sustained economic growth that leverages technological innovation, offers greater and more shared prosperity and is ecologically sound requires a vision of long term goals, defined in a clear and transparent way, and laying pathways to reach them. Businesses rely on a stable policy framework in order to take risks and create the jobs that societies and communities need to flourish and prosper.

Objectives of economic growth, social inclusion and environmental protection are not mutually exclusive, but neither are they necessarily mutually supportive. In the New Industrial Policy presented in this Policy Brief, we see a real opportunity for developing a policy agenda that is capable of transforming some of the trade-offs into potential synergies, problems into solutions and constraints into advantages.

Our research addresses five key questions: (a) How can we redefine competitiveness so as to encompass social and ecological objectives and to encourage industrial policy to promote technology shifts, sustainable and inclusive growth? (b) How do we realign innovation and industrial performance towards social and environmental objectives? (c) What is the impact of “green” innovation on growth, employment and social cohesion? (d) How can entrepreneurial dynamics drive smart and sustainable growth? (e) How can intangible assets and the quality of academic research act as drivers of change?

This Policy Brief outlines the essential elements of the New Industrial Policy for Europe (NIPE) for smarter, inclusive and sustainable growth.

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## KEY OBSERVATIONS

### Going beyond GDP

Economists have always understood that GDP is not a welfare indicator, yet GDP and its growth have dominated the discussion of economic policy and are seen as the single overarching measures of success of an economy or region. The criticism of this indicator and its alternatives were summarised by the Stiglitz–Sen–Fitoussi Commission, leading to the conceptualisation of ‘beyond-GDP goals’. The OECD has also published a corresponding set of ‘Better Life Indicators’ which several countries have started to use as a measure of performance. Income per capita and income growth will remain important goals particularly for low-income individuals, regions, and countries. Nevertheless, other goals receive higher priority as the marginal utility of income declines. Indeed, GDP dynamics ceases being important per se, but becomes instrumental for reaching other goals beyond, such as full employment, social security, health, consumer choice, and so on. In other words, GDP should be considered as a means to other ends.

### A New Definition: Outcome Competitiveness

A key step towards a new growth path for Europe is to acknowledge a new way of understanding and designing competitiveness. The WWWforEurope project conceptualises a new definition of competitiveness, *Outcome Competitiveness* that measures ‘beyond GDP goals’. In the past, the term ‘competitiveness’ has been used predominantly in the narrow sense of cost competitiveness, calling for lower wages and other production costs as policy instruments to ‘stay’ competitive or ‘regain’ competitiveness. However, this focus on cost has come under criticism.

Our new definition of Outcome Competitiveness stands for the “ability of a country (region, location) to deliver the beyond-GDP goals for its citizens”. This new definition of Outcome Competitiveness links inputs and processes to outcomes that are broad enough to encompass ‘beyond-GDP targets’: in particular, they also include ecological and social outcomes. Defined in this way, Outcome Competitiveness combines the evaluation of inputs or processes on the one hand, with an assessment of output and the achievement of further goals, on the other. We define the “high road” to competitiveness as one that is characterised by a productivity-enhancing social system and a technology-based environmental strategy able to support a dynamic transition to a new growth path.

The new definition of Outcome Competitiveness is based on capabilities such as skills, innovation, institutions (which can promote competitiveness), an empowering social system, and ecological ambitions, and it is measured by performance standards that include ecological-socio-economic indicators.

The high-road to growth marks a transition from competitiveness based on lower costs (low wages, low taxes, low oil prices), to competitiveness driven by higher productivity – boosted by dynamic capabilities such as education, innovation – renewable energy and social inclusion. It is economically difficult and socially undesirable for high-cost economies such as those in Europe to seek to increase

per-capita GDP by undercutting wages and thus deprive low-income countries of their competitive advantage (although there is no simple link between comparative unit labour costs and comparative trade shares in quality products). Advanced and high-cost economies must rather endeavour to raise quality, innovation, and develop new services. This definition could shift the focus of economic policy from costs towards capabilities.

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### Three pillars

Outcome Competitiveness rests on three pillars. The **income** pillar considers per-capita measures of net national income, disposable household income and household final consumption expenditure. The **social** pillar comprises indicators on poverty risk and the impact of social transfers, income distribution and unemployment. In the context of transition to a new growth path, the capability of the social system to enhance the productive capacity of the economy also becomes important. Productivity-enhancing measures, for example, include retraining people if qualifications become obsolete, reducing inherited differences in education, or increasing female labour participation. Finally, the **ecological** pillar captures resource productivity, greenhouse gas emissions intensity, energy intensity and the share of electricity generated from renewable energy sources. A composite indicator that synthesises the New Outcome Competitiveness is calculated based on the income, social and ecological pillars.

As expected, European countries perform very differently against individual indicators that mirror the three pillars as well as with regard to the composite indicator. The main findings are that Scandinavian countries – and Denmark in particular – score highly on this new definition of competitiveness thanks to a strong performance on outcome indicators such as social inclusion (poverty and employment rates) as well as economic performance (per-capita income, public debt).

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### From trade-offs to synergies

The new Outcome Competitiveness conveys not only the vision of a goal for society to aim at, but, more importantly, it identifies three coordinates of the trajectory towards this goal, which are the three pillars. Hence, a competitive Europe is an economically prosperous, sustainable and equitable Europe.

Shifting the direction of technological innovation towards “green” technologies is sometimes considered to yield a double economic dividend by offering increased “green” growth opportunities. Clearly, the challenge today is to simultaneously influence both the rate and the direction of technological innovation.

Our tentative results indicate that several important changes have to be made, if Europe is to develop its socio-economic model into a compelling vision. We start by noting some of the overarching changes needed in terms of three ‘game changers’.

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### Game changer 1: the green shift

Our research shows that investing in activities promoting a “green” shift can create jobs, economic opportunities and social enhancement. WWWforEurope work does not point towards the often-feared negative employment effects of environmental policies affecting production processes. Rather, environmental process innovations, such as those caused by country-specific environmental regulation policies, have little or no impact on employment beyond the general country-specific productivity trends.

Our work has found that product innovation has been a significant driver of employment growth in European countries; this also holds for environmentally-friendly product innovations. In fact, in manufacturing in some countries (e.g. Germany, Slovakia, and Czech Republic) the employment effect of new products with environmentally-friendly characteristics even outperforms that of new products without such characteristics.

This work suggests that “green” industrial policies which shift the focus towards environmentally-friendly innovation will probably not destroy jobs but rather contribute to job creation at least in some EU Member States. Industrial policy may therefore be used in addition to, or in combination with, other (horizontal) policies to stimulate ecological innovation and new environmentally-friendly production processes without severely endangering employment.

Especially for countries close to the productivity frontier, employment growth may increasingly depend on the ability of firms to develop and introduce new environmentally-friendly products. Hence, there may be scope for a growth path that combines job creation with a lower environmental burden. In the next sections, we will look at policies which may enable such a growth path.

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### “Green” gazelles

Unlike in the US, entrepreneurial dynamism is a key problem in the EU, potentially slowing down the creation of new industries, the diversification of existing knowledge bases and hence the shift towards activities compatible with a new growth path. Extensive research on the role of entrepreneurship in “green” technologies and “green” sectors has unveiled a number of opportunities. Our work suggests that firms generating ecological innovations display higher growth rates than those generating generic innovations. Moreover, when we focus on high-growth firms only, “green” gazelles, i.e. gazelles generating environmental innovations, actually grow faster than the other gazelles. One explanation is that environmental regulations have an impact on downstream firms’ demand for “green” technologies, boosting sales of the suppliers of such “green” technologies: environmental policies pushing firms to adopt green technologies trigger a bandwagon effect in the economy, which spreads across the value chain.

At the same time, technology policy promoting the development of specific technological areas should be coordinated with environmental policy in such a way that firms creating new technologies have an incentive to develop ‘green technologies’, anticipating the rising demand from downstream firms, possibly via public procurement.

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### Starting the Private “Green” Innovation Machine

Government intervention can contribute to starting the ‘private green innovation machine’, whereby a strategic “green” industrial policy comprises three key elements. **Firstly**, a higher price on carbon. Indeed, for the EU – and probably worldwide – the development of an efficient carbon market or the introduction of an energy tax is essential for low-carbon investments. **Secondly**, public support for R&D is crucial to address the knowledge externality associated with the creation of clean technology, as it will help to neutralise the established base advantage of the older, dirtier technologies. Since “green” R&D is now global, some degree of international coordination would be beneficial to pool resources, avoid excessive duplication and accelerate diffusion. **Thirdly**, government regulation, when properly designed, can both create demand for clean products and stimulate the creation of knowledge about clean technology. Government regulation, if sufficiently stringent, can foster the growth of ‘green gazelles’ and innovation in general.

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### Game changer 2: the technological shift

The EU has to fully embrace the opportunity of radical transformation that amounts to a unique technological shift. Across a number of contributions, our evidence suggests that economic growth and jobs will depend on the extent and pace of such a technological jump penetrating the current industrial base as well as triggering the formation of new sectors.

We find that radical innovation is often the outcome of cross-technology inter-sectoral technology spill-overs. We find that there are some key technologies that are also able to connect “distant” technologies and – through such a bridging role – they are able to generate highly disruptive innovations. Indeed, we find that such *bridging technologies* ‘cluster’ around *bridging platforms* that are subsequently able to spawn patents spreading across different technological fields, such that they can enhance the innovative capacity of other sectors.

Crucially, these bridging technologies are found in patents developed by universities and governmental non-profit organisations. The latter play a critical role in terms of technological synthesis and radical innovation, given their higher propensity to effectively adopt and use enabling technologies within their innovation activities. For this reason, we suggest that publicly-funded research is crucial in driving radical innovation, acting as a boundary-spanner in connecting, translating and integrating different technological knowledge.

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### Universities drive technological change

But a narrow focus on linking universities with firms and society without making sure that universities’ two prime missions (research and teaching) are adequately accomplished is an ineffective approach towards increasing the contribution of universities to innovative activity, and hence to a new growth path. Indeed, without universities that are able to operate at the frontier and on a par with those of the US, it is difficult to imagine a sustainable European growth and competitiveness model. Shifting R&D and innovative activity to new goals such as climate change can only be promising when the underlying quality of research is as good as it can be, reducing the cost of shifting and increasing the return on R&D efforts.

With regard to the potential contribution of universities to innovation-based growth, policy should take a long-term perspective for developing an industry-science eco-system, and avoid short term 'quick-fixes' that fail to enhance the systemic nature of industry-university collaboration. A particularly dangerous policy would be to focus only on the commercialisation of academic research, ignoring the broader contribution to economic development through other pathways, most notably the research-based training and mobility of human capital: graduates are probably universities' most important contribution towards a new growth path, rather than the commercialisation of discoveries. In this regard, policy makers should be more 'innovative' in their search for effective policy intervention, beyond the classic spin-off and incubator programmes.

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### Smart diversification

Technological complementarities and cumulated capabilities crucially affect the direction of technical change and innovation, or, put differently, firms usually diversify into new technological areas based on their existing capabilities. "Smart diversification" policies should thus target both the redirection of innovative activity taking into account existing capabilities, and the diversification of these capabilities through R&D and adoption of new technologies. In relation to ecologically-related innovation, R&D subsidies and price signals are not sufficient by themselves in order to shift productive systems on to new, ecologically sustainable trajectories. On this, we make three recommendations for directing innovative activities: (a) Mission-oriented policies must strike a balance between trying to foster technological capabilities that are very far from the capabilities the targeted firms currently master, and between avoiding technological lock-in by focusing too narrowly on a small set of ideas: (b) Smart diversification policies – policies aimed at moving firms' innovative activities towards new directions – should support entrepreneurship and entrepreneurial discovery which recombines competencies across technological fields and sectors: and (c) policymakers should favour R&D projects that aim at diversifying existing capabilities (where results are more uncertain) rather than expanding them.

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### Open innovation and phoenix industries

At the regional level, the renewal of existing industrial clusters is found to hinge on the breadth of regional competences that can cross-fertilise. We examine the emergence of 'phoenix industries' and point to the possibilities of building smart specialisation strategies and industrial policies driving innovations which are aligned with high-road strategies. We highlight three major factors in driving the development of such 'phoenix', 'new-growth-path' industries at a regional level, using the automotive example.

Firstly, 'open innovation' is found to be driving the sector, noting, for example, that smaller firms sometimes innovate more quickly/more cheaply than the major automobile firms, or the increased interaction across technologies, upstream and downstream supply chains and between larger and smaller firms. We also note the role of 'hybrid' manufacturing firms providing services, plus prototyping/low volume manufacturing (largely in niche vehicles) and the transferability of these competences across industrial sectors.

Secondly, our research points to the role of historic (and relatively immobile) private investment, for example the past/ongoing importance of established mass producers, the depth of skills and experience embodied in suppliers and in the local workforce; and cross-overs with other clusters. Finally, we stress the role of public-private sector cooperation.

Overall, this highlights the possibilities of building smart specialisation strategies and innovation-oriented industrial policies which are aligned with high-road strategies.

### **Investing in Intangible assets**

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As the competitive advantage in advanced countries is more and more determined by innovation, we also find that investment in intangible assets, or 'knowledge-based capital', becomes crucial. Higher investment in knowledge-intensive activities, is essential for the implementation of Europe's 2020 strategy. Boosting the quantity and quality of skilled labour, lowering firm entry regulation costs (in particular in Southern European countries), further investment in broadband infrastructure and better investment protection systems are the main factors in driving investment in intangible assets.

### **Game changer 3: social enhancement through education and training**

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Contrary to the common belief that technological change erodes only low-skilled jobs, WWfEurope work finds that the spreading of technology has produced substantial job losses especially among low- and medium-skilled workers, accompanied by only modest achievements in energy saving. However, information and communication technology (ICT) and advanced manufacturing technologies have been found to generate job losses for medium- to high-skilled labour. This means that highly skilled labour is not insulated from substitution effects induced by digital technologies in particular. In order to maintain jobs for low- and medium-skilled workers while making progress in energy saving, a strategy of cutting social security contributions for low-skilled workers may be coupled with the introduction of an energy tax to compensate public revenue losses and encourage energy saving.

At the same time, our work suggests that environmentally-friendly industrial innovation policies will probably not destroy jobs but on the contrary create new ones in net terms, at least in some Member States. Industrial policy may be used in combination with other policies that stimulate ecological innovation and new environmentally-friendly production processes without severely endangering employment.

As noted earlier, we find that environmental innovation (e.g. induced by industrial policies to reduce the environmental impact of production and consumption) may not give rise to negative trade-offs with regard to the competitiveness of firms in terms of their ability to generate jobs. Especially for countries close to the productivity frontier, employment growth may increasingly depend on firms' ability to develop and introduce new environmentally-friendly products. Hence, there may be scope for a path of economic growth that combines both rising employment and higher environmental quality.

In the context of transition to a new growth path, the capability of the social system to enhance the productive capacity of the economy becomes important. Productivity-enhancing measures include re-training people if qualifications become obsolete, reducing inherited differences in education, or increasing female labour participation.

In terms of performance in relation to our new definition of ‘outcome competitiveness, the Scandinavian countries manage to perform well in all three dimensions of the new growth path. They also score highly on a variety of input indicators, including those concerning an “enabling” social system (on active labour market policy, social expenditure for the disabled and other disadvantaged groups). Scandinavian social and educational policy may therefore serve as a model of how to achieve social inclusion while minimising adverse incentives for hiring and working.

In this context, the role of knowledge-creating and -transmitting institutions such as universities and public research organisations play an ever increasing role. Against this background, governments should aim at increasing the potential contribution of universities to economic growth and tackling societal challenges, both elements of a new growth path that combines economic dynamism with the preservation of environmental standards.

A key finding of our project is that social and environmental sustainability can be reconciled with stronger economic performance, provided that there is a clear policy commitment to actively design and implement a “green” agenda and an enabling social system. In other words, for Europe to achieve strong and sustainable economic growth driven by competitiveness (in terms of the new Outcome Competitiveness) is not only desirable, but also possible.

## RECOMMENDATIONS FOR POLICY-MAKERS

### The New Industrial Policy for Europe (NIPE)

Industrial policy is back in vogue. However, despite the familiar terminology, it now means a very different approach to economic growth. It should promote competition and facilitate a discovery process in a cooperative climate between government and business.

The new industrial policy should promote the competitiveness of a country or region, where competitiveness is defined as the ability to deliver the “beyond-GDP” goals.

For Europe, with high per-capita incomes, industrial policy should therefore embark on a high-road strategy of fostering competitiveness based on ability and competence, ‘good’ institutions, and high ambitions for social and ecological well-being. For Europe and its vision of a socio-economic system with strong emphasis on inclusion and sustainability, this high-road strategy explicitly includes equity and ‘green’ goals.

Given the need to reconcile social and environmental goals, the only viable option is to pursue an industrial policy targeting energy efficiency and social and ecological innovation. Industrial policy should



promote the long-run transition rather than holding back structural change. This is a demanding challenge, given vested interests and the conventional behaviour of governments of preserving the status quo and supporting national champions. Refocusing on the economy's industrial base is a necessity to anchor long-term socio-economic prosperity, particularly in the light of the experience of asset bubbles in financial and real estate markets. The new industrial policy should therefore aim at a diversified and balanced economy, and support the transition of towards an advanced manufacturing sector based on high value added, innovation and creativity.

We therefore define the New Industrial Policy for Europe (NIPE) as a strategy to promote high-road competitiveness for Europe, where competitiveness is defined as the ability of an economy to achieve 'beyond-GDP goals'. The NIPE should be ambitious in its vision, transparent and long-term-oriented in its objectives, internally consistent and effective in its actions.

### Recommendations for a new industrial policy

*The NIPE can be articulated in a number of recommendations:*

1. Industrial policy, "green" policy, regional policy, cluster policy, innovation policy, education policy and social policy need to be **aligned as a strategy for real change**. Environmental protection and social inclusion should be cross-cutting themes embedded in all other policies. The NIPE should be a complex of systemic solutions that transform the trade-offs between the three pillars into possible synergies by converting shocks and pressures into opportunities and choices. Long-term, transparent and integrated policies are preferred to short-term quick fixes and silos of policies in order to simultaneously target economic, environmental and social goals. To avoid trade-offs between technological change and growth/employment, policy should compensate "green"-policy-related costs for manufacturing by making innovation and training cheaper and more efficient. For example, in order to maintain jobs for low- and medium-skilled workers while making progress in energy saving, social security contributions for low-skilled workers should be cut, and coupled with the introduction of an energy tax to compensate public revenue losses and encourage energy saving.

2. The NIPE should translate competitiveness policies narrowly focussing on costs into industrial policies that aim at promoting the competitiveness of EU Member States and regions, where competitiveness is defined as the ability to deliver the "beyond-GDP" goals in line with the new definition of Outcome Competitiveness. A high road to growth should be embraced: one that focuses on advances in productivity, boosting capabilities (education, innovation), and shows global responsibility for energy efficiency and use of renewable energy. For industrialised countries with high per capita income, industrial policy should therefore explicitly be a high-road strategy of competitiveness based on capabilities, strong institutions that boost competitiveness, and high ambitions for social and environmental concerns. For Europe's vision of a socio-economic system with a strong emphasis on social inclusion and environmental sustainability, this high-road strategy explicitly includes equity and "green" goals.

3. The NIPE must shift the focus towards environmentally-friendly innovations that will create new functions and thereby new jobs. In combination with horizontal policies to stimulate ecological innovation and new environmentally-friendly production processes, the NIPE can create business and job opportunities

4. The NIPE needs to provide stable and reliable framework conditions for business in taking long term investment decisions in “green” innovation as well as in making short term adjustments. Hence, effective “green” policies need to be long-term-oriented and time-consistent in order to encourage the private sector to engage in long-term “green” investment – this is specifically relevant for “green” innovations requiring major investments in infrastructure. The predictability of “green” policies is crucial for the private sector – in order to change corporate behaviour, firms must know that the new policies are here to stay

5. The NIPE should rely on a set of “green” instruments that simultaneously comprises higher carbon prices, R&D subsidies and regulation. Instruments that support innovation in “green” technologies and an environmental policy that creates demand for environmentally-friendly technology will both strengthen economic performance at the firm level and environmental results at the systemic level. Failure to acknowledge the complementarity of policies will give rise to policy inefficiency. Currently, the biggest issue is low carbon pricing.

6. In regulation, stringency matters. ‘Soft’ approaches with long time horizons lead to ‘wait and see’ attitudes by firms, slowing down technological transition. The NIPE now needs to give credible and stringent policy signals via carbon prices and regulation, while helping firms to adapt through R&D policy.

7. Policymakers should favour R&D subsidies for product innovation – these are more effective than process innovation and demand-pull incentives.

8. The NIPE should be implemented through mission-oriented programmes that take into account existing capabilities (overstretching can lead to highly inefficient policies) and aim at diversifying them (shifting innovative activity). This is facilitated by mobility of research staff, R&D cooperation, entrepreneurship and FDI connected to the local innovation system, as well as by selection criteria for R&D project funding favouring diversification of knowledge, rather than further specialisation within firms’ existing knowledge base.

9. The NIPE should support a dynamic corporate sector and social entrepreneurship. Fast-growing, young innovative firms are scarce in the EU, potentially slowing down the transition to a new growth path. R&D policy and regulation or public procurement can foster the emergence of “green gazelles”, high-growth firms implementing “green” technologies.

10. Investment in capabilities is crucial to ensure that “green” innovation is shadowed by skills upgrading: this includes investment in intangible assets. Policies to foster greenfield investment include the quality and quantity of skilled labour, decreasing firm entry regulation costs (in particular in Southern European countries), further investment in broadband infrastructure and better investment protection systems.

11. With regard to increasing the contribution of universities and academic research/teaching to a new growth path, a narrow focus on commercialisation of academic research results is misguided. Key drivers of the potential contribution of universities are their research and teaching quality, as evidenced by the top-ranking US universities. Europe should put more emphasis on making EU universities as attractive as US universities for the best researchers and students from all over the world, by boosting research and teaching quality. Key ingredients are not only increased and more competitively allocated research funds, but also a proper tenure-track system that provides attractive career perspectives and early research independence for young researchers, which are currently more attracted by US universities.

12. “Green” policies should be mission-oriented. Mission-oriented programmes may also benefit from complementary market making measures, e.g. through public procurement.

13. Effective “green” policies should use a combination of tools rather than relying on individual instruments. These require an array of instruments that include carbon prices, R&D subsidies and regulation. Firstly, a higher price on carbon. Secondly, R&D support is crucial for addressing the externality associated with the creation of new “clean” knowledge. Thirdly, government regulation, when properly designed, can both create demand for clean products and stimulate the creation of “clean” knowledge. Lower-cost clean processes can be an important driver for the development and adoption of “green” innovations by the private sector. Government regulation can, among others, foster the growth of “green gazelles” and innovation in general; but it needs to be stringent. Furthermore, the failure of combining environmental and innovation policies can lead to unintended and undesirable outcomes such as the ‘green paradox’ or a technological lock-in, a well-known example being the subsidisation of renewables without a sufficiently high carbon tax, thereby leading to lower energy prices overall and a rebound in the use of ‘dirty’ energy. As noted for R&D subsidies, an energy tax should be combined with subsidies for product innovation, yielding positive economic and environmental results in the long run.

#### *Place-based, regional and local dimensions*

14. The NIPE should not be space-blind. Cluster policy should be reconciled with innovation and “green” policies: on environmental sustainability, policy should consider identifying a market demand for firms, set clear regulations and steer cluster policy to focus cluster efforts in organising value chains from existing players, inform companies about rules and opportunities, and coordinate collective research on ecological concerns shared across the cluster.

15. Industrial upgrading should be realised through technology cross-fertilisation at the regional level. Smart diversification policies – namely policies aimed at shifting firms’ innovative activities in new directions – should support entrepreneurship and entrepreneurial discovery, as this fosters the combination of competencies across technological fields and sectors, which would also apply to phoenix industries. Here, knowledge transfer mechanisms are of great importance: e.g. labour mobility (of researchers, e.g., between industries, or between industry and academia), R&D cooperation schemes (such as COMET in Austria), fostering employee start-ups and FDI (if well embedded in the local innovation system).

16. NIPE should support and encourage bottom-up and local initiatives looking for new models of business clustering to foster high-road growth. Firm clusters and cluster initiatives are crucial for regional economic resilience, as they can support innovation and adoption of new technology as well as technological cross-fertilisation (smart specialisation and smart diversification). ‘Place-based’ competitiveness is more likely to combine social inclusion with economic prosperity whilst leveraging the opportunities of alternative energies. Hence, clusters can be tools for the implementation of high-road strategies.

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The responsibility for the content remains with the authors.

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## RESEARCH PARAMETERS

### Objective of the research

In the face of the financial and economic crisis and long-term challenges from globalisation, demographic shifts, climate change and new technologies, Europe needs to redefine its development strategy. The objective of WWWforEurope – Welfare, Wealth and Work for Europe – is to strengthen the analytical foundation of this strategy. It goes beyond the Europe 2020 targets of smart, sustainable and inclusive growth and lays the basis for a socio-ecological transition. The new development strategy aims at high levels of employment, social inclusion, gender equity and environmental sustainability.

### The research programme

WWWforEurope will address essential questions in areas of research that reflect vital fields for policy action to implement a socio-ecological transition:

- It will deal with challenges for the European welfare state, exploring the influence of globalisation, demography, new technologies and post-industrialisation on welfare state structures.
- It will analyse the impact of striving towards environmental sustainability on growth and employment and provide evidence for designing policies aimed at minimising the conflict between employment, equity and sustainability. This involves using welfare indicators beyond traditional GDP measures.
- It will investigate the role that research and innovation as well as industrial and innovation policies can play as drivers for change by shaping the innovation system and the production structure.
- It will focus on governance structures and institutions at the European level and the need for adjustments to be consistent with a new path of smart, sustainable and inclusive growth.
- It will explore the role of the regions in the socio-ecological transition taking into account institutional preconditions, regional labour markets and cultural diversity and examining the transitional dynamics of European regional policy.

This research will be conducted within a coherent framework which from the outset considers linkages between research topics and highlights how different policy instruments work together. The results of all research areas will be bound together to identify potential synergies, conflicts and trade-offs, as a starting-point for the development of a coherent strategy for a socio-ecological transition.

### Methodology

The project builds on interdisciplinary and methodological variety, comprising qualitative and quantitative methods, surveys and econometrics, models and case studies.

## PROJECT IDENTITY

<b>Coordinator</b>	Karl Aiginger, Director, Austrian Institute of Economic Research
<b>Consortium</b>	<p>Austrian Institute of Economic Research          Budapest Institute          Nice Sophia Antipolis University          Ecologic Institute          University of Applied Sciences Jena          Free University of Bozen/Bolzano          Institute for Financial and Regional Analyses          Goethe University Frankfurt          ICLEI - Local Governments for Sustainability          Institute of Economic Research Slovak Academy of Sciences          Kiel Institute for the World Economy          Institute for World Economics, RCERS, HAS          KU Leuven          Mendel University in Brno          Austrian Institute for Regional Studies and Spatial Planning          Policy Network          Ratio          University of Surrey          Vienna University of Technology          Universitat Autònoma de Barcelona          Humboldt-Universität zu Berlin          University of Economics in Bratislava          Hasselt University          Alpen-Adria-Universität Klagenfurt          University of Dundee          Università Politecnica delle Marche          University of Birmingham          University of Pannonia          Utrecht University          Vienna University of Economics and Business          Centre for European Economic Research          Coventry University          Ivory Tower          Aston University</p>
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