



Research Unit Environment, Energy, Infrastructure

Our Topics

Environment, energy and infrastructure are basic resources for economic production. The research team in this unit looks at the linkage of environmental protection, efficient energy use and infrastructural needs with a focus in the transport market.

Climate Change and Greenhouse Gas Emissions

The reduction of CO₂ emissions is a global challenge. The European Emissions Trading System is the central policy instrument to tackle the growth of Greenhouse Gas Emissions in Europe. However, all European efforts remain ineffective, as long as fast growing economies such as China and India increase their emissions like they have done in the last couple of years.

Energy Market

Main topics in this policy area are the electricity market as well as the overall supply of energy resources. A market-based integration of renewable energies, the design of electricity markets and securing energy. The challenge here is to take advantage of an improved integrated European energy policy.

Green Economy

One big issue in the field of Green Economy is the potential of green jobs. Obviously, the boom of renewables and the importance of sustainable strategies in many firms created many new jobs, but the net effect when taking into account the loss of jobs in more conventional areas such as coal mining remains an important research subject.

Transport Market and Infrastructure

The transport of goods is a crucial input factor for many economic activities. Therefore, consistent regulation and a functioning transport infrastructure are basic requirements for economic growth. As the transport sector is responsible for a remarkable share of CO₂ emissions, there is a strong link to climate protection policy. Right now, there are numerous instruments in place. Whereas, for example, cars are subject to threshold regulation, electric rail traffic is part of the emission trading system.

All research topics in this research unit are politically dealt with at least on a European level. Most of the relevant regulation is decided in Brussels and the Member States need to implement European directives in national law. Hence, most research in this unit has a strong European context.

Our Findings and Positions

Climate Protection and Economic Growth

Both climate protection and economic growth are explicit goals of the European Commission. Although there are certainly trade-offs, these two goals do not necessarily contradict each other. One task of the unit's research is to show which policy instruments provide environmental incentives without hindering economic activity.

Market Solutions

With instruments like fixed feed-in tariffs to promote renewable energy installations the share of renewables in energy production has raised significantly in the last couple of years. However, the share of electricity production outside market price signals has grown as well. This has led to huge inefficiencies. Hence, aid to renewables need to get aligned with market incentives. A related problem is the electricity market design, where price signals should be decisive to

guarantee security of supply. This is also best implemented on the European level.

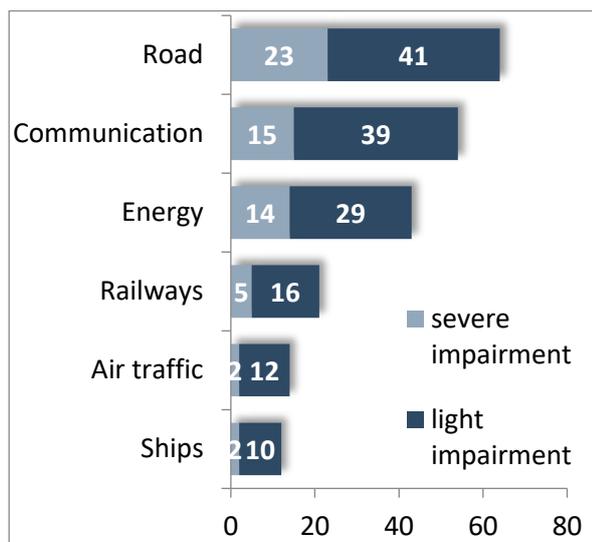
Economic opportunities

Climate protection is costly when it comes to repairing environmental damage. But there are many opportunities for innovative solutions and new technologies that are more energy efficient or less harmful regarding pollution. The use and re-use of resources is one aspect of this research area. To turn Europe into a circle economy ambitious waste policy targets are necessary. Circle economy regulation needs to open a level playing field for public and private activities.

Infrastructure maintenance and investment

Currently, German transport infrastructure is not maintained properly but depreciates because of a lack of investment.

Firms affected by infrastructure deficits
(Percentage shares of firms in survey)



Source: German Economic Institute

This affects firms that require the use of not only transport, but also communication and energy supply. When looking at broadband infrastructure, Germany is not on the same level as other European countries. Therefore, finding ways to finance infrastructure investment is a major task in this area.

Selected publications

In English:

Puls, Thomas, 2017, For better CO2 regulation of motor vehicles in Europe, IW Expertise, Cologne

Neligan, Adriana, 2017, Digital strategies for greater material efficiency in German industry, IW Report 3/2017, Cologne

In German:

Bardt, Hubertus / Schaefer, Thilo, 2017, Energiepolitische Unsicherheit verzögert Investitionen in Deutschland, IW policy papers 13/2017, Cologne

Puls, Thomas / Schaefer, Thilo /, 2017, ÖPP – eine Linderung, keine Lösung in: Zeitschrift für Wirtschaftspolitik Jg. 66, Nr. 3/2017, Cologne

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