

The Role of Energy Efficiency in Sustainable Energy

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Side Event

Investments in energy efficiency and renewable energy:

ways to make them business-as-usual

Organized by UNECE Sustainable Energy Division

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The task

Securing affordable and sustainable energy

- Energy security
- Energy affordability
- Energy sustainability

...not one or two of the three some of the time but all three all the time.

...it cannot be achieved.

...efficiency, including energy efficiency is essential for getting close.

Energy use is a private good of the moment unavoidably causing a cumulative public burden

To do more for the environment we must enhance
the quality of life by using less of everything:

- Avoid using energy on task that need not be performed and;
- Using energy efficiently on the tasks that do.

...and then:

1. Mitigate climate change and;
2. Adapt to it

Mitigating climate change

- Climate change mitigation targets:
 - **Temperature rise limit (2 deg. C)**
 - Reduced carbon intensity

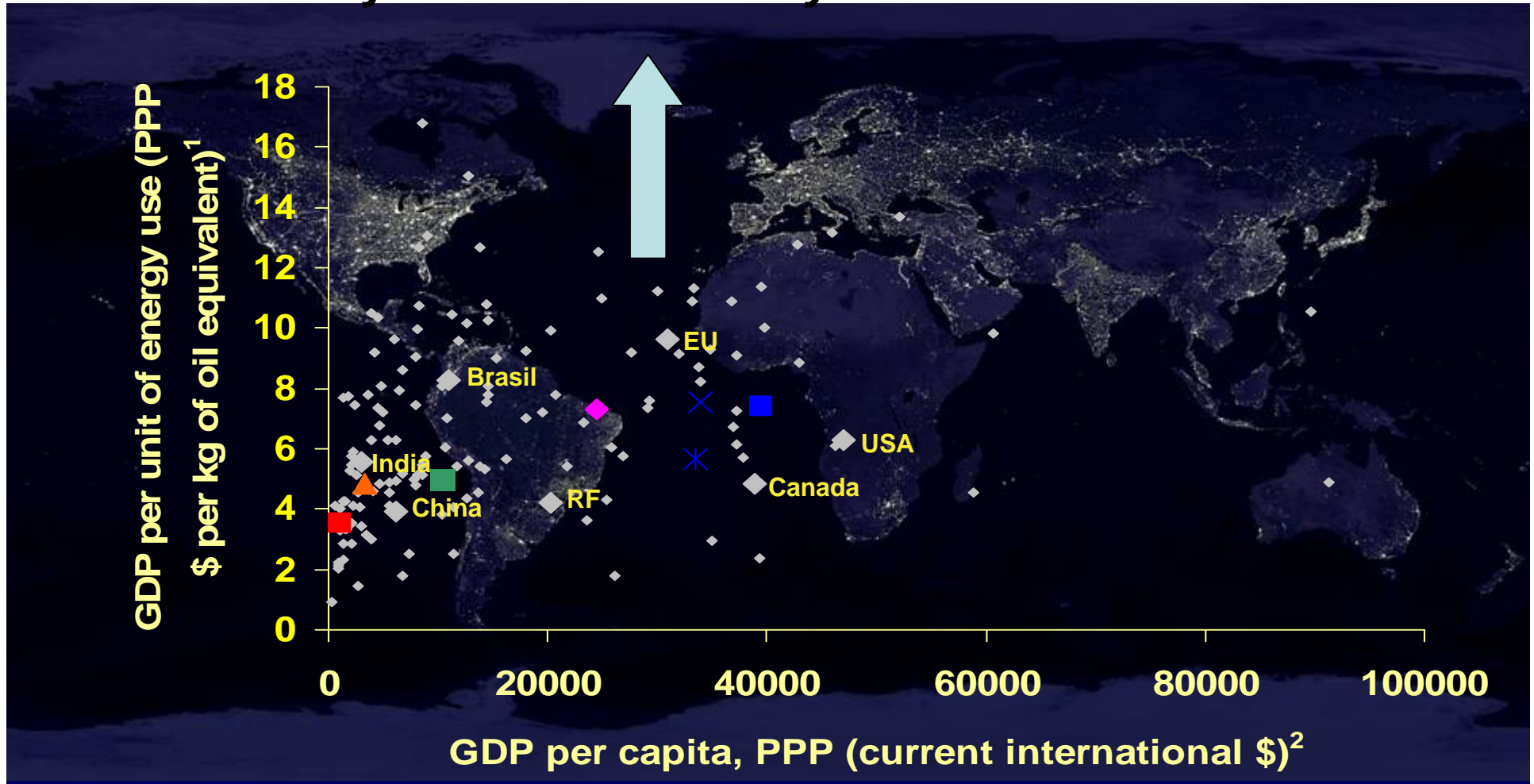
Flexibility is a necessary prerequisite for mitigating climate change while securing affordable and sustainable energy services. The mix of primary energy sources mobilised must be in harmony with the local energy resource potentials

- Balancing market instruments to align interests – design taxes, subsidies and collection of economic rent
- Direct support and regulation
 - Planning, resource management and execution
 - Introduce international standards and norms
 - Avoid unnecessary waste of energy
 - Compensate for market imperfections.

Adaptation to climate change

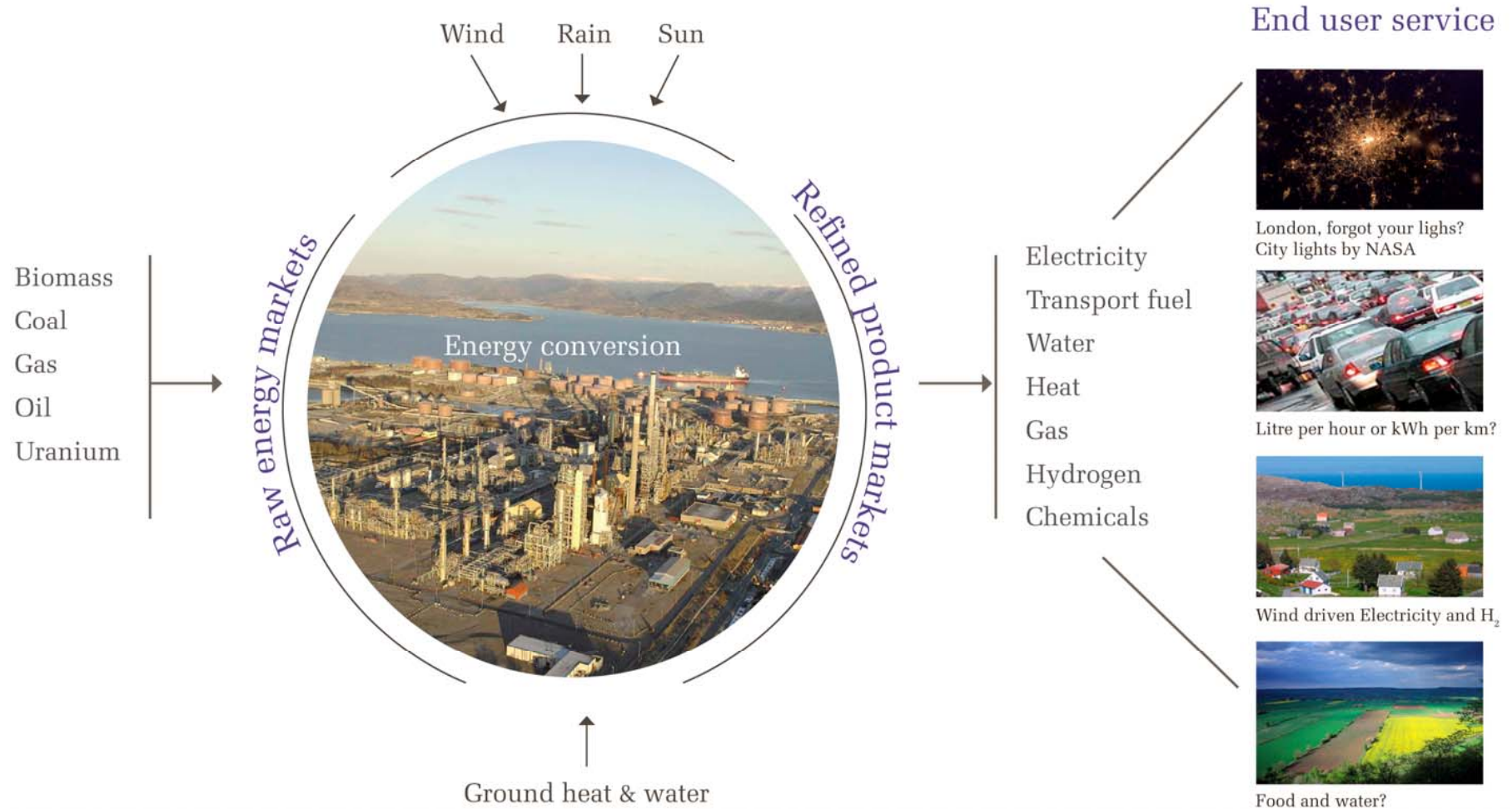
- Adjustments
- Migration
- Urbanisation
- Resource restriction
- Poverty

Reduced energy intensity improves security, affordability and sustainability



- ◆ Individual countries
- ▲ Lower middle income
- ✖ High income: nonOECD
- High income: OECD
- Low income
- Upper middle income
- ◆ Europe & Central Asia (all income levels)
- ✖ OECD members

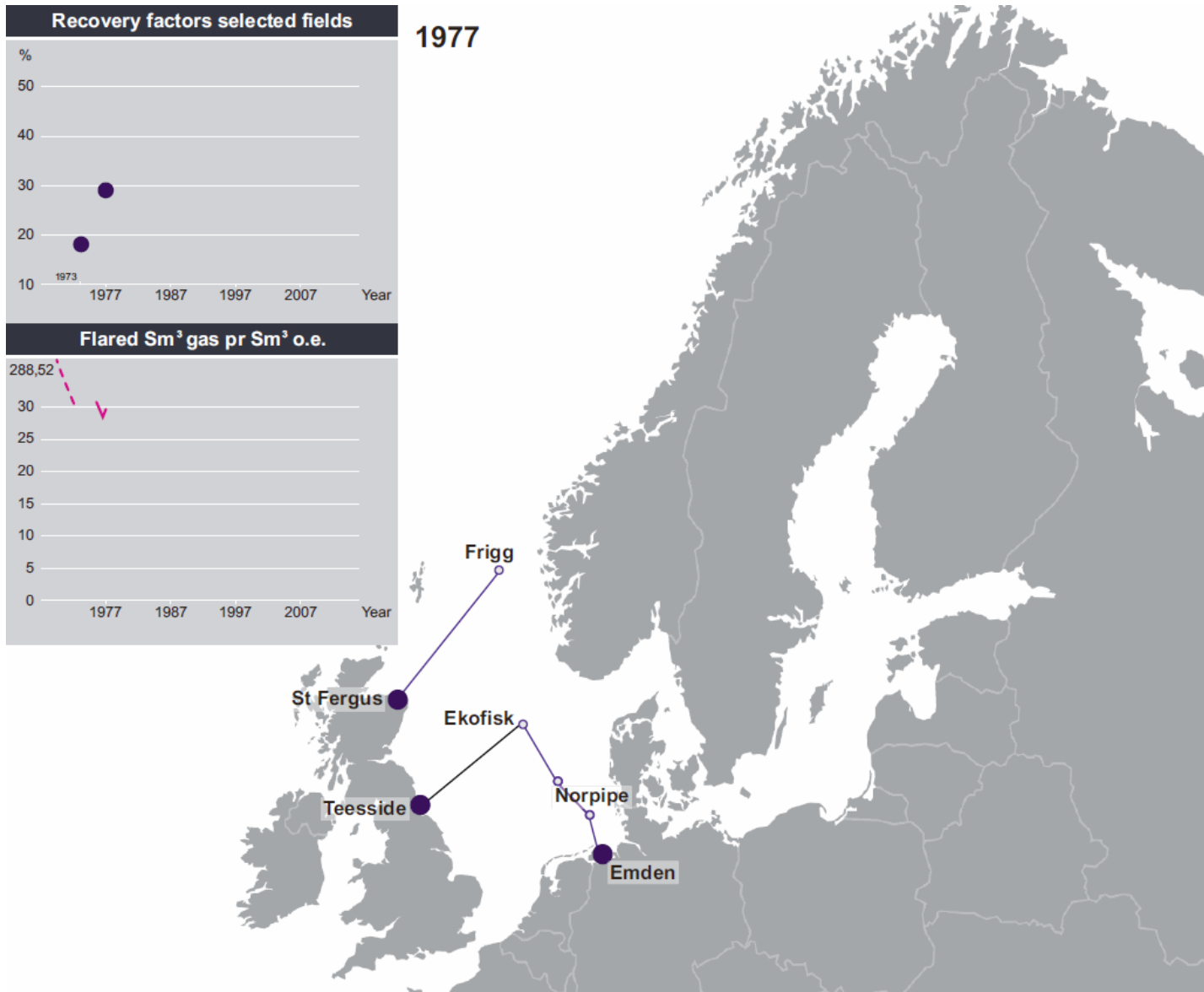
Energy efficiency from source to service addressing all market segments

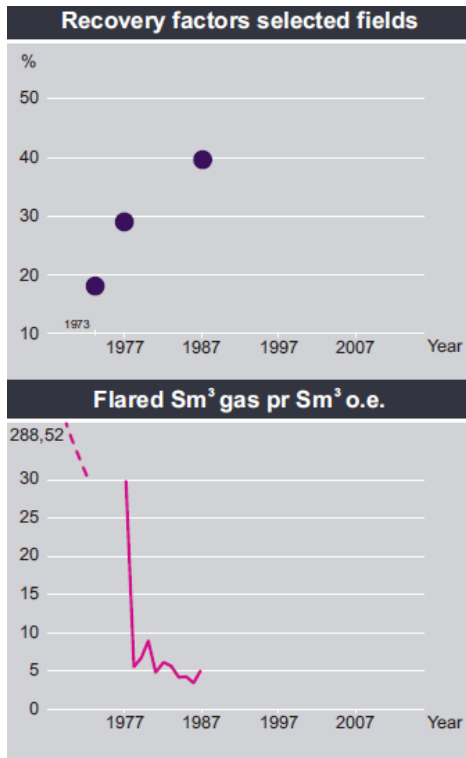


An example: The Petroleum Activities Act of Norway

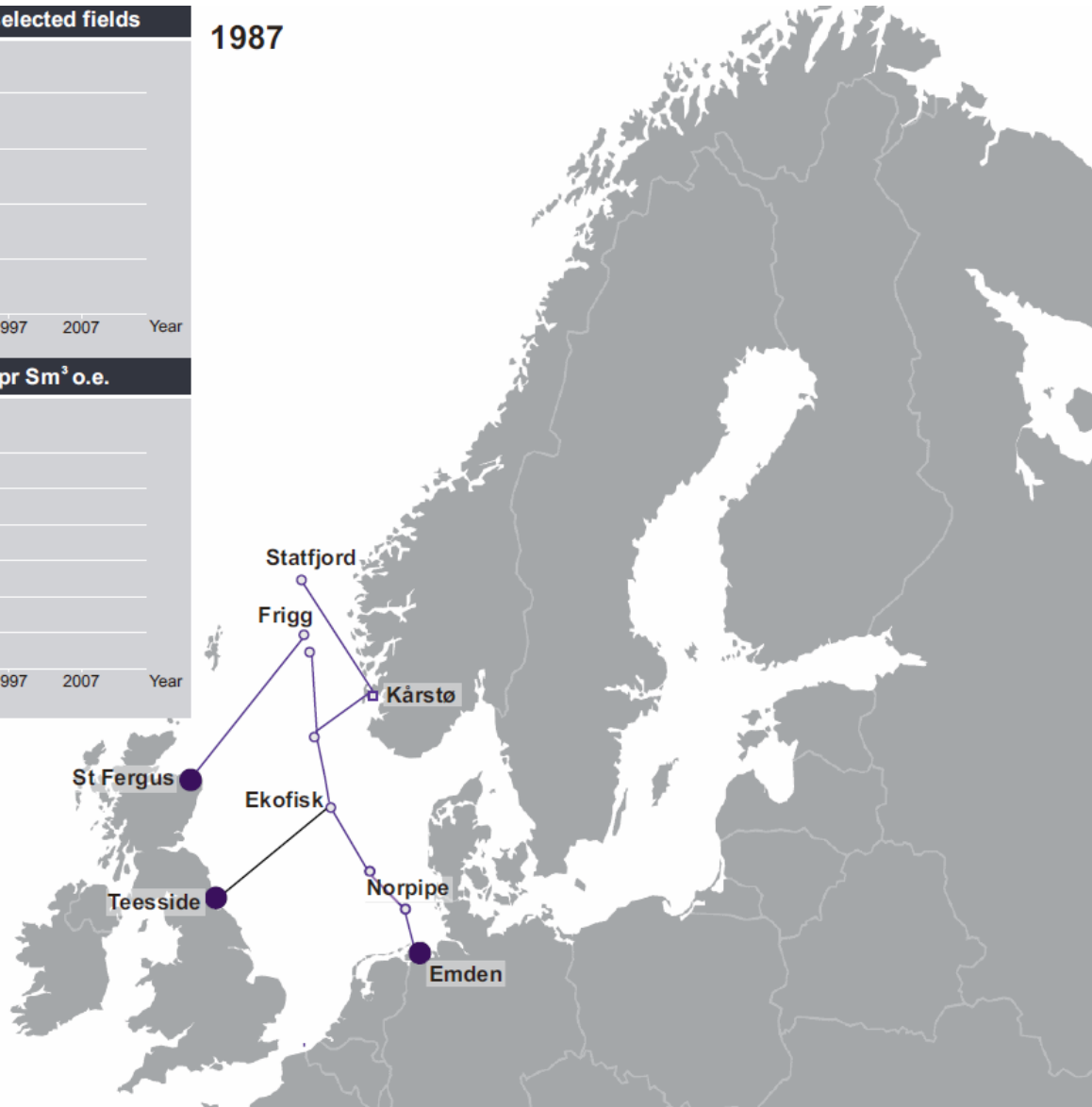
- **Section 4-1**
Prudent production
 - Production of petroleum shall take place in such a manner that as much as possible of the petroleum in place in each individual petroleum deposit, or in several deposits in combination, will be produced. The production shall take place in accordance with prudent technical and sound economic principles and in such a manner that waste of petroleum or reservoir energy is avoided. The licensee shall carry out continuous evaluation of production strategy and technical solutions and shall take the necessary measures in order to achieve this.

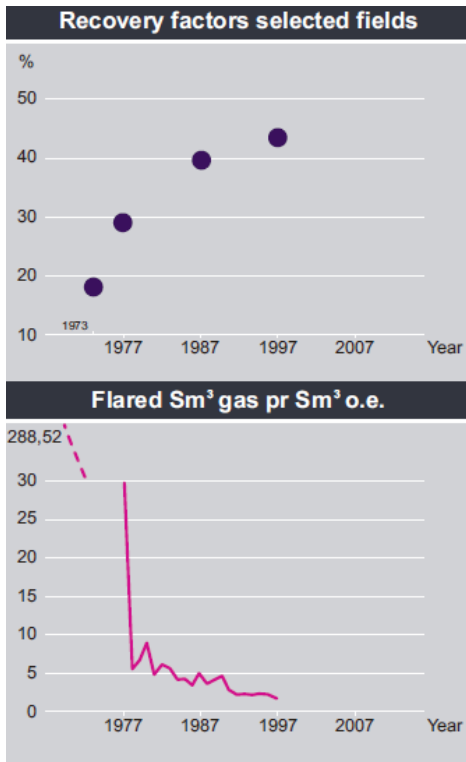
...and it works



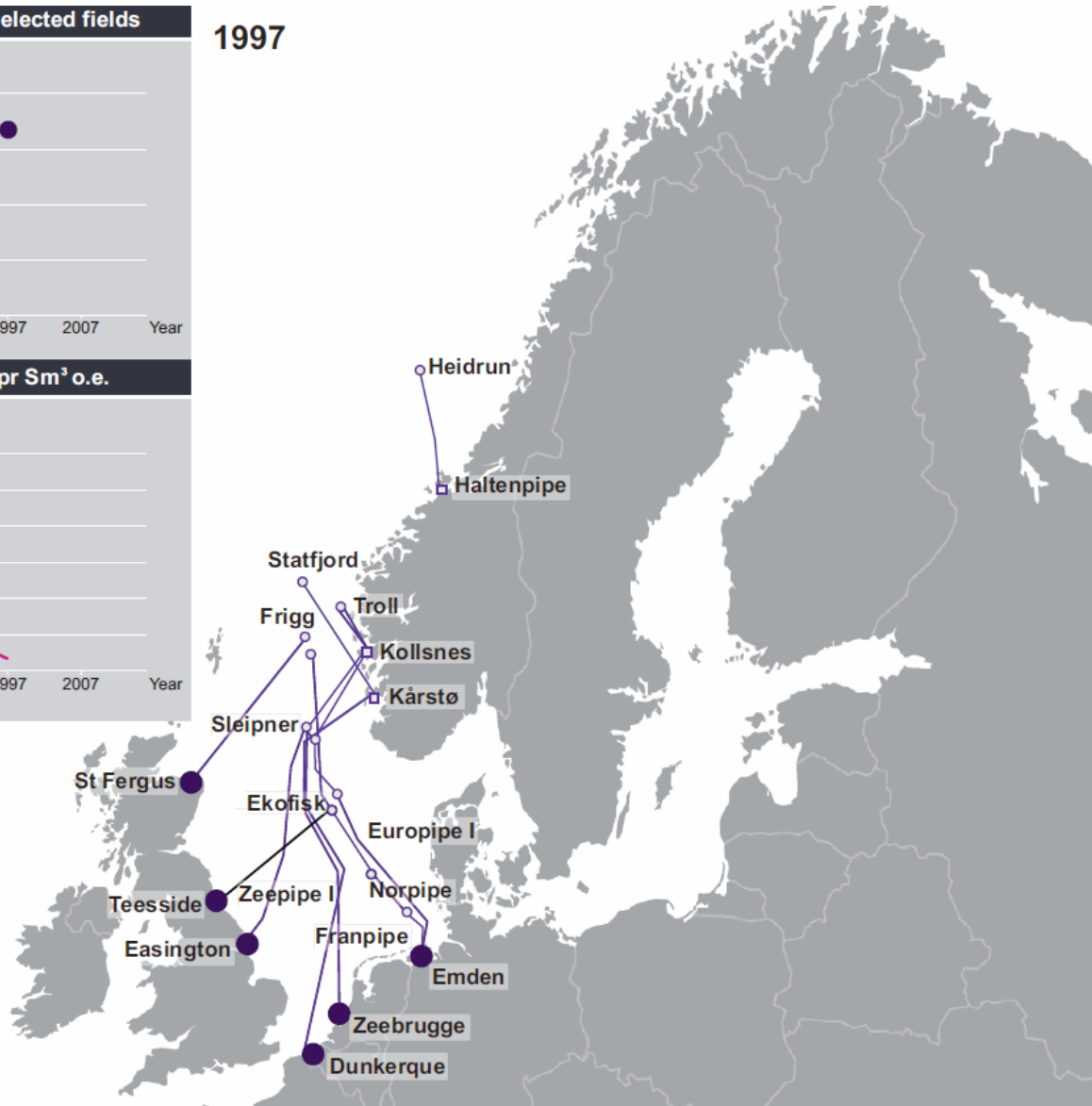


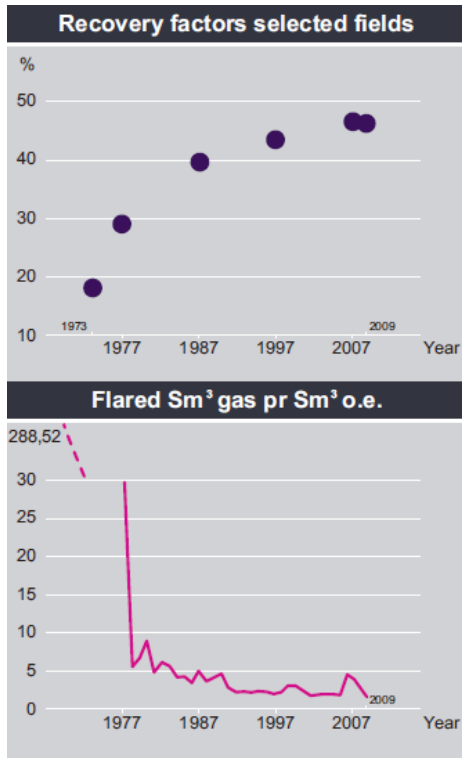
1987



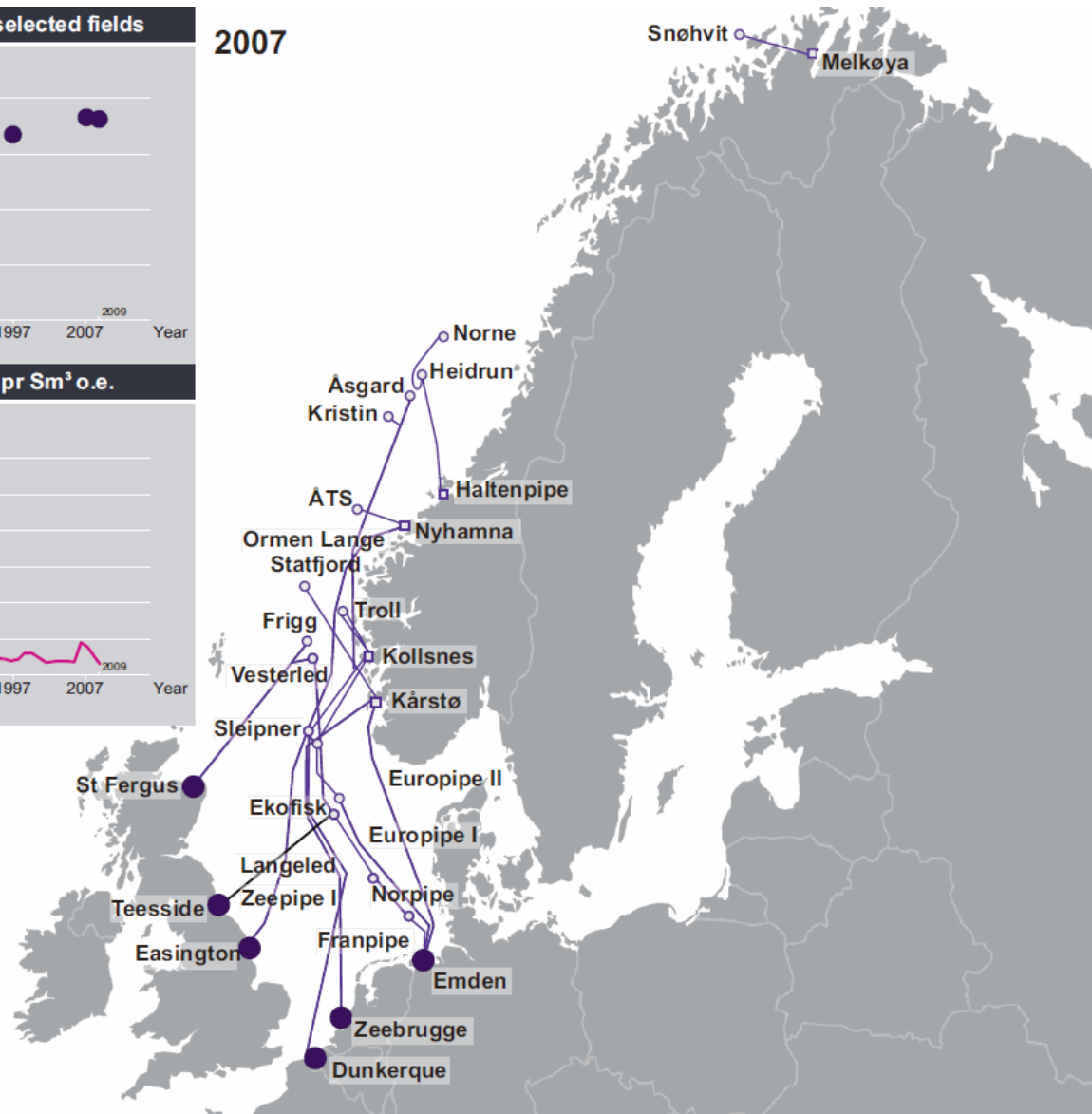


1997

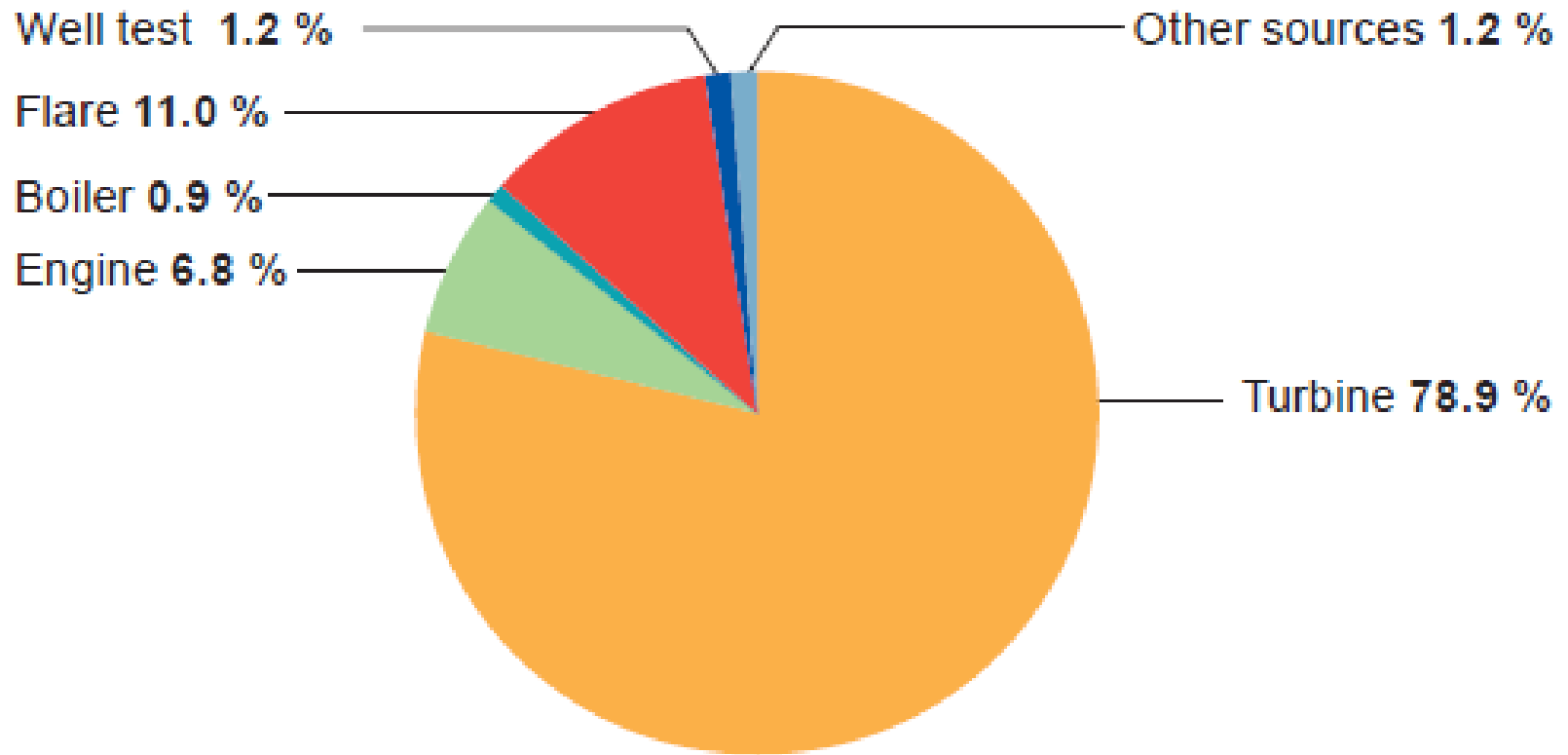




2007



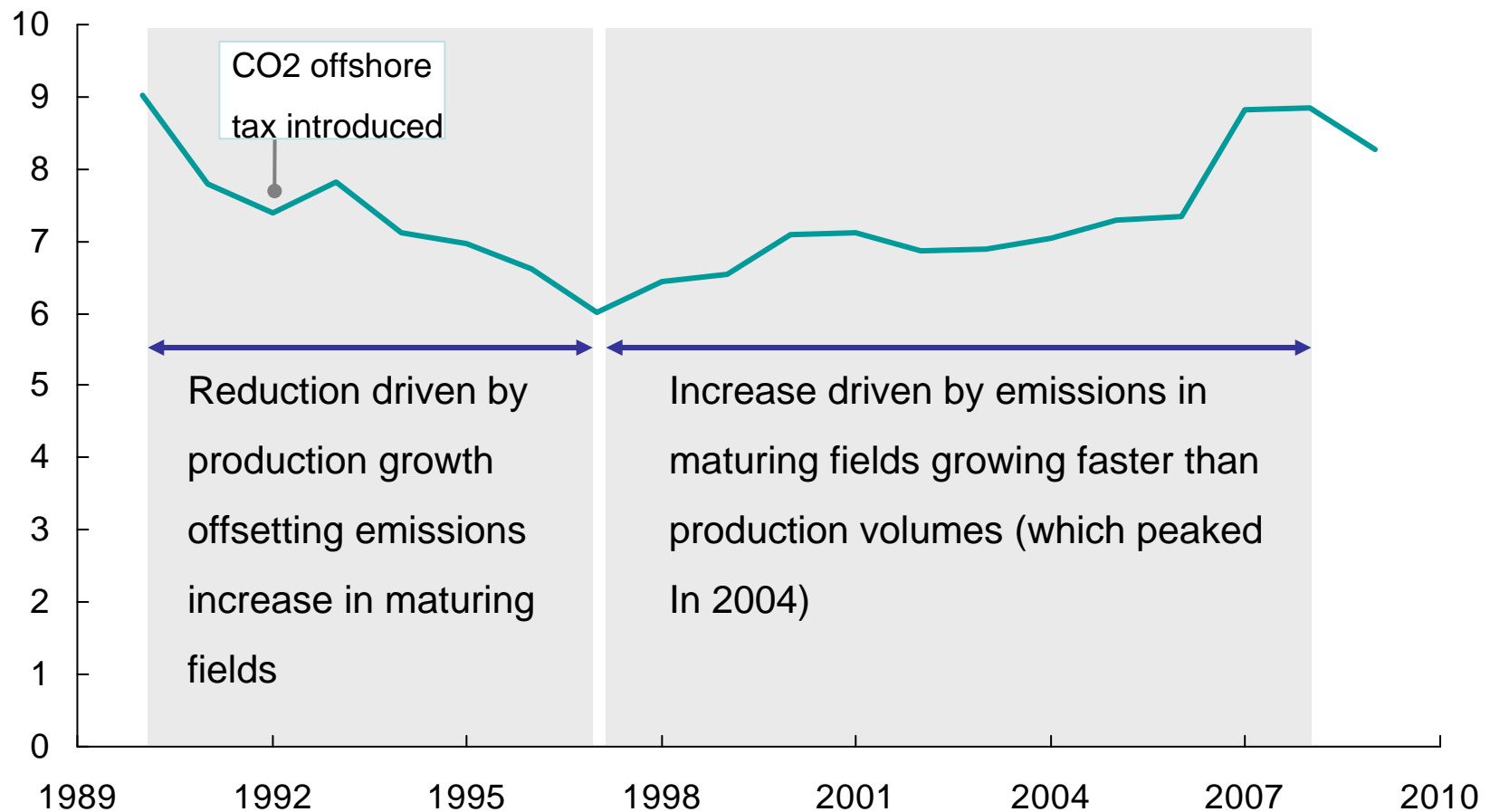
CO2 emissions from petroleum activities by source



Source: Norwegian Petroleum Directorate

Carbon intensity in Norway has improved, but increases as fields mature

Kg CO₂ e/ BOE



UNECE is essential for the achieving energy efficiency for sustainable energy across boundaries



- Multilateral agreements
- International norms and standards
- Transfer of best practice policies, technologies and financial solutions across boundaries
- **Facilitating effective and energy efficient public-private partnerships at scale across boundaries**

The UN has the required convening power

Thank you

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