

Demand-side solutions to address energy shortages

How the EU and Member States can boost energy savings through effective, socially balanced policy measures

Executive Summary

This policy paper highlights the potential of demand-side policies to ensure energy security in the European transport and housing sectors. Our policy design framework set out here provides guidance on how these policies should be designed to be effective and socially balanced. In addition, we propose a multi-level governance approach to coordinate EU and Member State actions taken to reduce energy demand. In doing so, public policy can cushion oil and gas price increases and mitigate social impacts in light of a looming energy shortage in Europe.

The uncertainty about Russian energy supply is further aggravating a dramatic rise in record-high energy prices. The rising energy prices put European households at risk of energy and transport poverty simultaneously. Historically, similar situations have exhibited drastic potential for socio-political destabilisation. Globally, high energy prices have often been accompanied by fuel riots in the past. To mitigate these risks, we recommend that the EU makes full use of all available policy options to proactively address prospective social implications.

To date, the EU is largely dependent on energy imports. Russia is the EU's main supplier of oil (27%), gas (41%), and coal (47%). While a diversification of coal is readily achievable, the situation surrounding EU oil and gas imports is more volatile. As of April 2022, research shows that **ending imports of Russian gas and oil under current circumstances risks leaving a gap** of 1 mb/d of oil and 700 TWh of gas per year.

The European Commission has announced the comprehensive REPowerEU plan to react to accelerating price increases and the new geopolitical reality. However, this plan currently **misses the opportunity to utilise the potential of demand-side measures to effectively achieve energy savings**. By implementing and coordinating demand-side policies across the Union, European policymakers would be able to respond to the short-term economic and social challenges. Additionally, this supports the achievement of the Green Deal's long-term objectives. The **recent IPCC report**, *Climate Change 2022: Mitigation of Climate Change*, identifies demand-side policies and

sufficiency as crucial strategies alongside renewables and energy efficiency. Hence, we recommend widening the REPowerEU policy mix to include demand-side measures in order to reduce final energy consumption in the EU.

Past examples provide evidence that **rapid energy savings are possible and can have lasting effects**. For instance, final energy consumption was reduced by 15 % through Japan’s “setsuden”, an information campaign, which was implemented after the country was struck by earthquakes and a tsunami in 2011.

Demand-side measures entail important co-benefits for Member States:

- Demand-side measures increase the **EU’s strategic independence** and as such increase the **EU’s geopolitical leverage**.
- Every kWh of energy saved in the EU will **mitigate price increases** due to the reduced demand for energy products.
- Demand-side reductions help to protect **EU industry**. When equity considerations are taken into account, demand-side measures are applied precisely where overconsumption prevails. Energy is saved where it least affects the functioning of our systems and infrastructures. In contrast, energy rationing would hit industry first.
- Demand-side measures have **beneficial effects on health and wellbeing** for example through active mobility and improved energy efficiency of buildings.
- Early action carries large benefits. Lifestyle changes have the potential to **decrease the long-term economic costs of the energy transition by one-third**.

The design of demand-side policies is crucial for unlocking co-benefits and social acceptance. We put forward a **Policy Design Framework** that gives guidance on the “how” and “what” for effective and inclusive demand-side reductions:

- The “how” encompasses **three principles for the policy design process**
 1. An **honest and careful framing** is important to avoid misunderstandings, emotionally overwhelming citizens, and over-individualising the problem.
 2. Where possible, the **involvement of people and key stakeholders** ensures context specificity and better quality of policy outcomes through equity considerations and increasing ownership and acceptance.
 3. A **whole-of-government approach** enables policymakers to manage tensions and trade-offs in complex situations, create policy coherence and avoid carbon lock-ins
- The “what” provides a **Policy Instrument Impact Assessment Tool** to evaluate demand-side measures along three dimensions:
 1. Their potential to **reduce primary energy demand for oil and gas**
 2. Their **social impact** and potential to alleviate energy poverty in the long run and, as such, increase the affordability and accessibility of energy services.
 3. Their **transformative potential** to initiate long-term changes that support the achievement of the EU’s climate objectives.

Policy Design Framework for Demand-Side Reductions

How?

Co-creation and involvement of stakeholders to ensure:

- Context specificity
- Equity
- Ownership and acceptance

Whole-of-government approach to:

- Manage tensions and trade-offs effectively
- Create policy coherence
- Avoid carbon lock-ins and ensure DNSH compliance

Appropriate and honest framing to:




- Avoid misunderstandings and feelings of overwhelm
- Avoid over-individualising the problem

What?

Policy Instrument Impact Assessment

Primary energy saving potential	Social impact	Transformative potential
Mb/d of oil equivalents or gas	Assessment of Equity impacts	Assessment of transformative potential

We applied the Policy Instrument Impact Assessment Tool to a total of 68 demand-side measures. These were proposed by research institutions, think tanks and civil society organisations in response to the current energy market and geopolitical situation. Very few of the proposed measures met all three criteria: energy savings, social impact and transformative potential. In the paper, we present a non-exhaustive list of promising demand-side measures that make a substantive contribution to the criteria mentioned above.

Policy measure		Energy savings potential 	Social impact 	Transformative potential 
Transport	Incentivise Car&Ride sharing	0.108 mb/d of oil equivalents	Positive impact on accessibility	medium
	Car free Sundays	0.09 mb/d of oil equivalents	Benefits for cyclists, children, physically disabled people, and health benefits	High, if long-term measure
	Annual local public transport ticket for 365-Euro	0.076 mb/d of oil equivalents	Positive impact on affordability, accessibility, and progressivity	high
	Substitution of short haul flights by train connections	0.009 mb/d of oil equivalents	Progressive effect	high
Buildings	Bonus programme for deep renovations for worst performing buildings	0.056 mb/d of oil equivalents	Positive impact on affordability, accessibility, and progressivity	high
	Smart thermostat rollout	0,054 mb/d of oil 0.55 mcm per day of gas	Positive impact on affordability and accessibility	medium
Cross-	Energy savings campaign	0.056 mb/d of oil; 0.027 bcm per day of gas saving	Positive impact on affordability	medium

	Ban on energy-intensive cryptocurrencies	0.032 mb/d of oil equivalents	No direct impact	medium
--	---	-------------------------------	------------------	--------

For the EU we propose:

1. The **EU's Inclusive Energy Savings Initiative (IESI)** to achieve EU-wide energy saving targets for oil and gas. It uses a multi-level governance approach by coordinating Member State action. IESI can be steered by existing EU bodies and builds on the experiences of the Recovery and Resilience Facility, the European Semester and the Effort Sharing Regulation. As a central element it introduces **reduction targets for primary energy demand and introduces National Energy Saving Plans**.
 - An **EU Energy Consumption Communication** on at least a weekly basis. The communication aims to increase awareness, to highlight the most important variables on energy consumption and gas storage levels and to present best practices for energy saving measures.
 - An **EU Energy Savings Package** that raises the level of ambition of the legislative proposals currently being discussed under the Green Deal. It further proposes fast-tracking measures, which could effectively reduce oil and gas consumption. As part of this package, we recommend:
 - using **Ecodesign** to significantly reduce energy demand in Europe, e.g. through
 - reconsidering **a phase-out date for gas boilers** in the EU
 - **phasing out gas hobs and gas ovens,**
 - **a ban on all non-water-saving shower heads and taps,**
 - strict minimum **energy performance standards for buildings** as well as a legally binding definition of **"deep renovations"**, coupled with an annual deep renovation rate of at least 3 percent in Europe,
 - an Important Projects of Common European Interest (IPCEI) programme for **heat pumps,**
 - **raising fleet standards for passenger cars and light commercial vehicles** to reduce emissions by at least 100% by 2030 compared to 2021, and
 - **promoting multimodal mobility** by creating standards necessary for completing a European sustainable mobility market. Only with harmonised cross-border journey planners and booking platforms, prices will be transparent, and journeys be it by train, car- or bike sharing facilitated for all citizens.