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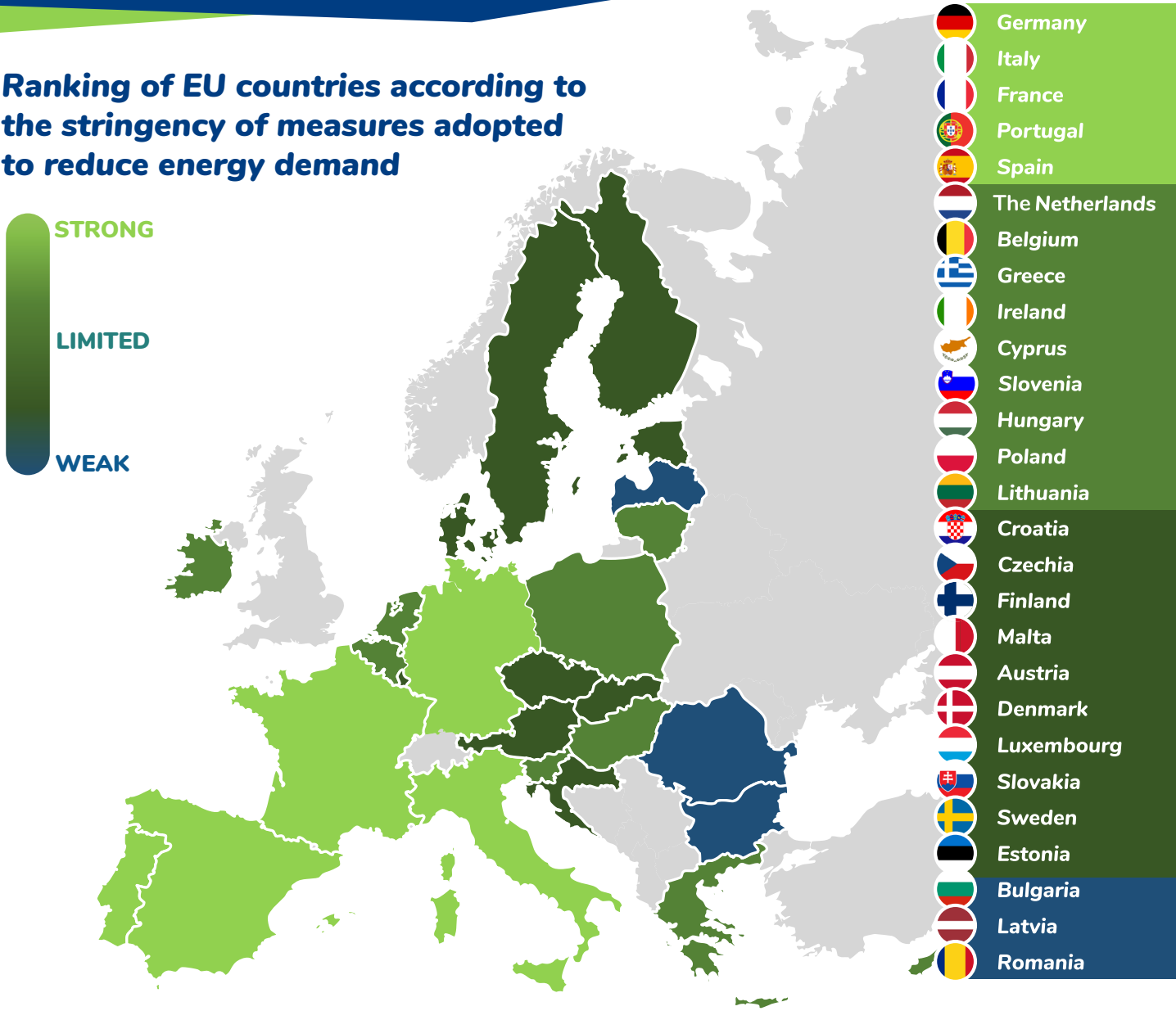
Saving Energy for Europe

Spring 2023 update:

Contrasting EU states' measures to reduce gas and electricity consumption

Ranking of EU countries according to the stringency of measures adopted to reduce energy demand



Saving Energy for Europe

During the course of the past winter, EU imports of Russian fossil fuel were radically reduced. This led to high prices for gas in particular and a number of energy security efforts emerged in response, including the introduction of energy saving targets by the EU. This was also a necessary countermeasure to the immense cost to EU countries of supporting the rising energy bills of households and businesses: the total budget earmarked for measures to shield households and firms from the energy crisis exceeded €646 billion (Bruegel). With the heating season 2022/2023 now over, it is time to take stock. Measures taken by EU states between 1st August 2022 and 31st March 2023

- to reduce gas and electricity consumption varied widely. While energy security was maintained, this was also due to specific circumstances - in particular, very high prices for gas and electricity and warm weather. These factors make it unclear whether the EU will be able to repeat these savings and achieve energy security in the coming winter. The extension of the targets for gas use reduction should thus be accompanied with additional energy saving measures.

This report contrasts EU countries' energy saving measures in various sectors and calls for greater effort in monitoring and evaluating energy saving measures.

Main findings

- Only 14 out of 27 EU states have adopted **mandatory measures to reduce energy.** In the last six months (see our previous report), Poland, Lithuania, Cyprus, and the Netherlands have joined this group.
- **The most robust measures on gas savings** have been implemented in countries that import large quantities of Russian gas such as Italy and Germany.
- Some less gas-dependent countries like France and Spain also have **strong energy reduction measures,** targeting both the public and private sectors, large industries as well as small businesses.
- **Portugal is the only country that regularly and openly reports on the implementation and progress of energy saving,** setting up a monitoring committee and providing analyses of specific measures.
- Luxembourg, Austria, Malta, Nordic and Eastern European states tend to have **weaker energy saving measures** in place.
- Bulgaria, Romania and Latvia **have not introduced any national measures** to reduce gas and electricity consumption.
- **Over the past winter, high energy prices led to gas and electricity savings** even in the absence of energy saving measures - especially where alternatives to fossil gas and electricity were available and affordable.

Background

EU countries met their voluntary target on reducing gas consumption by 15% between 1 August 2022 and 31 March 2023, compared to the average consumption of this period in the previous five years. However, with only a 6.2% reduction in EU electricity consumption during the same period, most member states neither met the agreed target of reducing overall electricity demand by at least 10% nor the mandatory target of reducing electricity consumption by 5% during peak hours.

On 28 March 2023 EU member states agreed to extend the coordinated reductions for another year, aiming at reducing gas consumption by 15% between 1 April 2023 and 31 March 2024 compared to their average consumption in the period between 1 April 2017 and 31 March 2022 **(this would generate further savings of 60 bcm of fossil gas, more than France and Belgium consumed in total throughout 2021).** As before, individual countries may choose the means of reductions. A similar extension of the period of application of the Council Regulation for a non-binding goal to reduce overall electricity demand by at least 10% has not yet been agreed to.

Policy recommendations

The European Commission projects that EU countries will be able to reach a gas storage level of 90% by 1 November 2023 only if gas consumption remains 15% lower until the end of October. In addition, the reduction in demand must continue until the end of March 2024 in order to ensure sufficient gas reserves for the following winter. If consumption reductions are not achieved as planned, this could negatively affect the filling of underground storage facilities and increase the level and volatility of gas prices.

To avoid this, we urge the European Union to step up its efforts:

1. **Establish a public energy saving monitoring task force in the EU** to track action both at the national and EU levels. The task force should verify the achievement of targets, but also evaluate the measures taken to achieve targets.

   National contact points should be responsible for implementing measures of energy consumption reduction and regularly and publicly report to the monitoring task force. The task force should regularly and publicly report on progress across the EU and in individual EU countries.

2. **Promote ample dissemination of the energy-saving status through coordinated media across the EU.** This could provide positive feedback for citizens' energy-saving efforts. Simple messages could be shared in prime-time national TV news and on social media.

3. **Support the fast development of demand management instruments for gas and electricity.** This market could consist of a system that rewards the flexibility of consumers (including small consumers, through aggregators) for the intermittent interruption of energy consumption.

4. **Accelerate the diffusion of smart meters,** allowing a monitoring of energy consumption in real time and making savings more salient.

5. **Introduce fair and harmonised, EU-wide rules** on energy sufficiency measures so that all EU citizens are encouraged to adopt the same energy-saving practices, truly making this a joint European effort. Rules can take into account country specifics such as temperature levels, quality of buildings etc. Transparent rules would foster the spirit of confronting a common challenge together across the EU.

Top three short-term energy saving measures

we like them because temporary measures are aligned with structural measures

1 **Heating more efficiently and moving to renewables and heat pumps:**
Measures to support investments in non-fossil heat sources like solar and heat pumps were widely adopted, especially in Germany, the Netherlands, Sweden and Finland. Many countries offered financial incentives for heat pumps and offered funding programs for various temperature system optimization measures.

2 **Heating and cooling temperature limits:**
Voluntary or mandatory limits to heating and cooling were introduced in almost all countries. Targeting public buildings and office spaces rather than residential housing appears particularly promising. Some countries also advised the use of timers and other smart temperature programming tools.

we like them because everyone is empowered to do their part through a simple tool

3 **Lighting reduction and switching to LED:**
At least 24 countries mandated or advised measures to increase the efficiency of lighting to help save energy. Measures ranged from eliminating unnecessary lighting on monuments and decorative winter displays, to limiting certain lights overnight. Replacing street lighting with LEDs was embraced by many local municipalities as a quick, effective way to reduce energy demand.

Beyond the necessary exchange of best practices on national strategies, **international dialogue on local levels** is also promising: As part of a joint initiative by the EU Commission and the Covenant of Mayors, at least 50 mayors reported the short-term energy saving actions taken by their municipalities (3/02/23). Specific measures are publicly available in an online repository.

Research Methodology

We conducted interviews and web-based research between September 2022 - April 2023. We focused on measures intended to directly reduce energy demand and assigned EU state scores based on the **stringency, comprehensiveness, timeliness and transparency** of measures.

The colours of the countries (on the map and in the table) depict their performance:

Light Green: countries that implemented mandatory and voluntary measures for the public and private sectors. Also countries that report regularly and openly on the implementation and progress of energy savings.

Green: countries with mandatory measures only for one sector (in most of the cases in the public sector).

Dark Green: countries that rely only on voluntary energy-saving measures.

Dark Blue: countries that have not introduced any energy saving measures.

	Adopted	Early Movers	Obligatory or Voluntary Measures		Scope of the Obligatory Measures			Transparency
		before Sep '22	voluntary only	vol. & oblig.	public entities	private citizens	businesses	availability of info
evaluation	1	1	1	2	1	2	3	4
Germany	✕	✕		✕	✕	✕	✕	
Italy	✕			✕	✕	✕	✕	
France	✕	✕		✕	✕		✕	
Portugal	✕			✕	✕			✕
Spain	✕	✕		✕	✕		✕	
The Netherlands	✕	✕		✕			✕	
Belgium	✕	✕		✕	✕			
Greece	✕	✕		✕	✕			
Ireland	✕	✕		✕	✕			
Cyprus	✕	✕		✕	✕			
Slovenia	✕	✕		✕	✕			
Hungary	✕			✕	✕			
Poland	✕			✕	✕			
Lithuania	✕			✕	✕			
Croatia	✕	✕	✕					
Czechia	✕	✕	✕					
Finland	✕	✕	✕					
Malta	✕	✕	✕					
Austria	✕		✕					
Denmark	✕		✕					
Luxembourg	✕		✕					
Slovakia	✕		✕					
Sweden	✕		✕					
Estonia	✕		✕					
Bulgaria								
Latvia								
Romania								

List of tracked energy sufficiency measures

- Reducing thermostat temperature by 1°C or more
- One-hour reduction of the daily heating system operation
- Shortening of the heating season in buildings
- Reducing the use of air conditioning
- Extraordinary review of the energy efficiency of buildings if the previous one was prior to January 2021
- Turning off or dimming of public lights at night or when public spaces are not in use
- Replacing bulbs with LED lighting
- Switching off computers outside working hours
- Turning off advertising hoardings
- Turning off shop fronts at night
- Equipping business premises with automatic door-closing systems when air or heating is on
- Explaining the actions taken on information posters and install thermometers that make the internal temperature visible
- Prohibition of heating leisure pools with energy from the grid
- No heating for public buildings corridors
- Switching to cold water in all public buildings
- Switching off public fountains
- Not using portable air conditioners, heaters and radiators
- Reducing the temperature and duration of showers
- Lowering the heat after boiling and reducing the ignition time of the oven
- Using a dishwasher and washing machine with a full load.
- Disconnecting the plug from the washing machine when it is not in operation
- Switching off or activating the low-energy function of the refrigerator during holidays
- Increasing fridge's temperature by 1 degree
- Not leaving on standby TV, decoder, DVD
- Reducing the hours of switching on the bulbs
- Better home insulation
- Mandatory gas-saving rules for companies
- Promoting teleworking, both in public administrations and private companies
- Modifying the law on public procurement in order to streamline those contracts related to energy saving
- Helping industries and SMEs to promote energy efficiency
- Appointing an "energy efficiency ambassador" in the company and presenting projects to reduce electricity consumption
- Gas auction model providing incentives for industrial consumers to reduce their gas consumption
- Awareness campaigns aimed at citizens suggesting the above-mentioned measures

Group 1

Countries with stringent energy-saving measures

Following our classification, **Germany, Italy, France, Portugal and Spain have the most robust measures in place.** This is particularly relevant, as these 5 countries alone covered over 60% (equal to 254,12 bcm) of the EU's gas demand in 2021. This means that a 3% reduction in the total gas consumption by our frontrunners corresponds to the total gas consumption in 2021 of Finland, Lithuania, Sweden, Estonia and Latvia combined (7,71 bcm), which are the countries with the highest percentage reductions in gas consumption in 2022, according to Eurostat.

Compulsory measures to reduce consumption have been introduced **in Germany and Italy for all sectors: public, private citizens and businesses. In France and Spain for the public and small and large enterprises.**

Some of these measures were already in force during the summer 2022 in France, Germany and Spain.

In **France** businesses appointed an "ambassador of energy sobriety" by September 2022 and presented blueprints to the government for cutting their electricity consumption by October.

Transparency and monitoring of results is an important component of energy use reduction. A progress report released by **Portugal** (15/03/23) presents findings on measure implementation levels and the energy saved. Despite our best effort, we could not find equivalent progress reporting by any other EU countries.

Finally, it is worth mentioning that, citing concerns about a demand reduction period of 12 months instead of the previous eight, one of the largest european gas importer and consumer, **Italy**, abstained from the vote extending the voluntary 15% gas consumption reduction target to March 2024 (30/03/23).

Most important measures adopted by countries with stringent measures

Mandates limiting heating and air conditioning

France (3/08/22) and **Spain** (1/08/22) limited heating and air condition for public and business actors while **Germany** (24/08/22) and **Italy** (6/09/22) additionally targeted private households.

Mandates limiting energy use for lighting

Germany (24/08/22) introduced wide-ranging but temporary limits on lighting not essential for safety, **France** (3/08/22) and **Spain** (02/08/22) required businesses to turn off lighting for advertising and shop lights at night. **Portugal** (8/09/22) limited lighting in central government and issued recommendations for private households and businesses.

Other energy-saving measures

France and **Germany** (6/09/22), **Portugal** (5/10/22): reduced heatings in public pools. In France (5/09/22), companies were required to cut their energy use by 10 percent or face enforced rationing of electricity and gas.

Public information campaigns

In each country of this group, public information campaigns encourage citizens to make small behavioural changes to limit their energy use. In **France**, citizens were further urged, including through real time electronic alerts, to specifically minimise energy use at peak consumption times (18/10/22).

Measures by sub-national authorities

France: In Paris, public lighting of the Eiffel Tower was reduced and street light bulbs replaced by more efficient LEDs (13/09/22). The town of Thouars limited streetlights from 10 p.m. to 6 a.m. since June 2022. Some high schools in Brittany lowered their thermostats (5/09/22).

Germany: Hanover (28/07/22), Berlin (27/07/2022) and Bavaria (2/08/2022) implemented various energy-saving measures.

Italy: In Florence, an ordinance prohibits public, commercial and administrative establishments from keeping their doors open when air conditioning systems are operating (28/07/22).

Spain: The municipality of Pedreguer converted nearly all municipal lighting to LED and promoted energy community formation (1/12/22). Spain actively supports energy efficiency efforts by regions and cities, offering subsidies for a variety of energy efficiency building improvements that yield a 10% reduction in final energy consumption (1/08/22).

Portugal: 103 municipalities reduced indoor and exterior lighting (15/04/23).

Group 2

Countries with strict energy-saving measures mainly in the public sector

In this cluster, countries have introduced **binding measures** to reduce the consumption of gas and electricity **only in one sector, almost always the public one, paired with voluntary measures for businesses and citizens.** In **the Netherlands** mandatory measures applied only to the private sector.

The Netherlands, Belgium, Greece, Ireland, Cyprus and Slovenia introduced **some measures already in the summer of 2022.** In Hungary and Lithuania measures were introduced in September and in **Poland** only in December.

In **the Netherlands** the Government introduced stricter obligations for larger companies and organisations (3/10/22), which were required to implement all possible energy saving measures having an impact immediately or within five years (4/07/22).

The **Polish** government rejected the compulsory targets set by the EC (18/08/22) and initially favoured voluntary measures to save energy instead. A statutory obligation for the public sector was however introduced later (01/12/22).

It is worth stressing that both **Hungary and Poland** voted against extending the EU's coordinated, voluntary 15% energy consumption reduction to March 2024 (29/03/23).

Most important measures adopted by countries with strict energy-saving measures mainly in the public sector

Mandates limiting heating and air conditioning

Belgium (31/08/22), **Greece** (9/06/22), **Ireland** (7/09/22), **Cyprus** (8/12/22), **Lithuania** (8/09/22), **Hungary** (8/09/22) and **Slovenia** (8/07/22).

Mandates limiting energy use for lighting

Cyprus (8/12/22), **Greece** (13/09/22), **Ireland** (7/09/22) and **Belgium** (31/08/22).

Public information campaign

Greece (21/09/22), **Ireland** (28/04/22), **the Netherlands** (2/04/22), **Slovenia** (8/07/22) and **Belgium** (7/04/22).

Measures by sub-national authorities

Athens announced a plan for government buildings to reduce air conditioning and heating use and install new windows. Energy officers have been assigned to monitor achievements. Beyond Athens, the town of Kamena Vourla upgraded the public street lighting, resulting in a 10% energy savings (26/04/23). The city of Wrocław chose not to host a New Year's Eve Party, cut back on Christmas illuminations, and limit the lighting hours on public bridges (22/09/22).

Group 3

Countries with only voluntary measures

Austria, Croatia, Czechia, Denmark, Finland, Luxembourg, Malta, Slovakia, Sweden and Estonia focused only on voluntary measures carried out through public information campaigns that partly rolled out in the summer **(Croatia, Czechia, Finland and Malta)** and partly only at the beginning of the autumn **(Austria, Denmark, Luxembourg)** or even later **(Estonia, Sweden and Slovakia).**

Several campaigns focused mainly on heating (**Slovenia** 9/07/22) and hot water use (**Finland** 25/08/22, **Slovakia** 4/12/22), with some countries adding to these transportation (**Austria** 13/09/22) and lighting use (**Croatia** 4/08/22).

The lighting of streets, squares and monuments is also the recipient of calls for savings as well as building temperature controls (**Malta** 28/08/22, **Austria** (25/07/22), **Luxembourg** (8/09/2022) and **Denmark** (2/09/22)

Luxembourg's measures include offering consultations for companies on actions to reduce natural gas and electricity consumption (8/09/2022). In **Malta** (28/08/22) a specific campaign encourages businesses to adopt energy efficient practices and technologies (10/01/23).

Czechia offers an energy-saving manual and free consultations for energy-efficient renovations (20/07/22). The energy-saving campaign in **Slovakia** set up centres in regional cities to provide free energy advice. The government also increased funding for their Green Homes Project (27/06/22) which offers vouchers for heat pumps, solar installations and other renewable energy equipment (27/06/22).

Group 4

Countries with no national measures

Bulgaria, Latvia and Romania have not, as of 31st March 2023, implemented any national measures to reduce energy consumption.

Latvia may not have felt the need to pass energy-saving measures as fossil gas consumption in Latvia has been falling for 10 years: an increased decline in 2022 was driven by high prices, as well as energy savings achieved by reducing working hours and increased working from home. Further savings have been attributed to regulating internal building temperatures (30/12/22). Electricity imports also replaced power production from gas-fired cogeneration plants.

Similarly, in Bulgaria the reduction in energy consumption is attributable to relatively mild winter temperatures and high gas prices.

In the absence of national energy-saving measures, some municipalities in Latvia took actions on a local level, primarily focusing on lighting efficiency (8/02/23).

Some stakeholders in these countries also note that electricity consumption levels in their countries are already among the lowest per capita in the EU.

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