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# **Toward Climate Neutrality and a Resource-Efficient Economy:** Policy Progress in Affluent Democracies

Affluent democracies that have implemented ambitious, consistent climate frameworks have often also devised effective policies for transitioning to a decarbonized energy system or circular economy. However, even forerunners like Sweden, Finland, Spain and Denmark still face challenges in aligning policy goals, institutions and policy measures or in developing safeguards to ensure the efficient implementation of their ambitious climate policies. Meanwhile, all 30 OECD and EU countries evaluated are only beginning to prepare for a shift toward a circular economy.

In this Policy Brief, we assess the effectiveness of policy strategies essential to transitioning to a resource-efficient and climate-neutral economy. Specifically, we evaluate each country's progress in (a) executing climate policy frameworks, (b) implementing strategies to build a decarbonized energy system by 2050, and (c) adopting approaches for a circular economy. Our analysis draws from the climate action, decarbonized energy system and circular economy data found in our Sustainable Governance Indicators (SGI) dataset (for details on data sources see www.sgi-network.org). Our sectoral analysis identifies specific opportunities and barriers affecting the success of transformational policy strategies.

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### **Climate action:**

Aligning climate goals, institutions and policy measures for impact remains a key task in all 30 countries

Through the SGI's Climate Action criterion, we assess how effectively climate policy frameworks developed by governments in 30 OECD and EU countries are fostering the conditions and regulations needed to achieve climate neutrality by 2050. To approach this question, we begin by analyzing each countries' past policy outcomes through an evaluation of key metrics such as net greenhouse gas emissions per capita in 2022 and the Environmental Performance Index variable "greenhouse gas trend adjusted by proximity to target." While these metrics highlight past achievements, they provide limited insight into the current policy direction of governments.

To gauge each country's climate action goals and trajectory, we conduct a comparative analysis of current policy inputs and outputs. This assessment includes expert ratings and reports from our SGI country experts, supplemented by quantitative data where available.

Our evaluation integrates both past achievements (50%) and expert assessments of current policy input and output (50%) to provide a nuanced view of each government's climate policy performance. Our metrics on policy ambition and performance can also function as early warning indicators, highlighting political developments that may not yet be fully captured in recent quantitative outcome data.

#### a. Climate action: policy outcomes

A consideration of the 2022 data on per capita net greenhouse gas (GHG) emissions and their annual growth rates over the past decade, adjusted for declines in GDP and proximity to zero-emissions targets, shows that Sweden, the UK, Greece, Switzerland, Denmark and Estonia have made the most progress. In contrast, Canada, Australia, the United States, Ireland and New Zealand have advanced the least in this regard (see Fig. 1).

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tries	4	Switzerland	8.0	
unco	5	Denmark	7.8	
		Estonia	7.8	
0.00000	7	France	7.7	
C d55C55		Portugal	7.7	
veloped	9	Finland	7.5	
es are		Spain	7.5	
led to	11	Germany	7.1	
ch this		Japan	7.1	
oc' pact		Lithuania	7.1	
es past	14	Italy	7.0	
/ met-	15	Slovenia	6.9	
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	18	Austria	6.6	
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		Hungary	6.5	
		Latvia	6.5	
and tra-	23	Israel	6.0	
	24	Czechia	5.8	
current		Poland	5.8	
cludes ex-	26	New Zealand	5.1	
ovporto	27	Ireland	5.0	

#### FIGURE 1 Climate action: policy outcomes

Rank Country

28

29

30

Unit: Score.

United States

Australia

Canada

Source and metadata:

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Among the countries we examined, **Estonia** ranks among those with the highest per capita net GHG emissions (rank 24). However, the country also stands out for its reduction in GHG emissions over the past decade. According to the latest Environmental Performance Index (EPI) report, "Estonia is the only country in which policy interventions achieved emission reductions that, if maintained, put the country on track to reach net-zero by 2050 without exceeding its allocated share of the remaining carbon budget. From 2013 to 2022, Estonia slashed its GHG emissions by 40% while simultaneously growing its economy and population" (Block 2024 et al.: 34). This reduction was primarily driven by a decline in electricity and heat production from oil shale, Estonia's largest energy source and increased generation from wind, solar photovoltaics (PV) and locally sourced forestry biomass (International Energy Agency 2023 b). The share of renewables in final energy consumption rose from 24.5% in 2013 to 38% in 2021 (see www.sgi-network.org).

# b. Climate action: policy ambition and direction

To assess progress made in transformational policy strategies that target a climate-neutral economy, it is important not to rely solely on emissions data (see Bersalli et al. 2024). We also consider it essential to evaluate whether policy guidelines and policy measures are effectively supporting forward momentum in this transition. An examination of the ambition of and policy consistency within national climate action plans through the detailed SGI country reports shows that none of the 30 countries surveyed has yet demonstrated its full commitment to achieving climate neutrality by 2050. Notably, the average score for policy ambition and direction (6.5) falls below the average score (6.7) for past policy outcomes, underscoring an urgent need to identify and address barriers to progress.

Comparatively, the current climate action frameworks in Denmark, Finland, Germany, Portugal, Spain and Sweden are relatively ambitious and consistent, with clearly defined goals, sector-specific targets, detailed action plans and a robust system for tracking progress (see Fig. 2).

Yet, it is crucial to acknowledge that even the policy frameworks of forerunners like Denmark, Finland, Germany, Portugal, Spain, Sweden and the United States reveal inconsistencies and underlying tensions. For example, there are often gaps between policy goals and existing regulations, such as ongoing subsidies for fossil fuels. Additionally, insufficient safeguards may hinder the efficient implementation of policies across different government levels. There are also questions about whether courts are equipped to hold governments accountable for meeting climate targets.

**Denmark** offers an innovative approach that also highlights some areas where future adjustments could enhance policy consistency. In addition to creating an independent climate council that monitors annual progress, the Danish government established a new



FIGURE 2 Climate action: policy ambition and direction

Source and metadata: www.sgi-network.org/2024/ Survey\_Structure.

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internal committee chaired by the minister of finance. This six-member committee, which meets weekly, coordinates climate policies across sectors, adding weight to its approach with the Ministry of Finance's leadership. However, the government has been criticized for its limited measures to meet its 2025 interim climate targets, relying heavily on emerging technologies to achieve  $CO_2$  reductions. Critics have raised concerns about whether this approach is viable without structural changes, such as implementing a  $CO_2$ tax in agriculture (see Klemmensen et al. 2024).

All 30 countries surveyed need to accelerate and better coordinate their policy efforts to meet the Paris Agreement's climate goals. On the opposite end of the spectrum, countries like Poland, Japan, Hungary, Slovakia, Israel and Australia have shown relatively limited commitment to achieving net-zero emissions by 2050 (see Fig. 2). This lack of dedication suggests that substantial progress in reducing CO<sub>2</sub> emissions is unlikely in the near future for these nations. This stands in contrast to the situation in the **United States**, which, while lagging behind in CO<sub>2</sub> reduction efforts, has made significant investments in the green transition and reinforced its climate commitments through legislation, including the Inflation Reduction Act of 2022 and the Infrastructure Investment and Jobs Act of 2021 (see Johnson et al. 2024).

#### FIGURE 3 Climate action: overall policy performance



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www.sgi-network.org/2024/ Survey\_Structure. c. Climate action: overall policy performance

Considering both past achievements and current policy strategies, Sweden has made the most progress in climate protection to date. The country has a long history of stringent climate policies and regulations that have been backed by a comprehensive regulatory framework that is generally effective in driving environmental progress. Assessments regularly highlight areas of advancement as well as shortcomings. However, since the election of a right-wing alliance in 2022, environmental regulations have been relaxed to a degree that makes meeting ambitious targets within the proposed timeframe unlikely (see Petridou et al. 2024). Based on recent policy directions and historical performance, Poland, Australia, Canada and Hungary have the longest road ahead when it comes to targeting a climate-neutral economy (see Fig. 3).

# Achieving a decarbonized energy system by 2050:

Greater political commitment needed across all 30 countries to accelerate energy transition

The energy sector accounts for nearly three-quarters of global GHG emissions, with the largest shares coming from energy use in industry (24.2%), transport (16.2%), and buildings (17.5%). Agriculture, forestry and land use contribute 18.4%, industry 5.2% and waste 3.2% (Ritchie 2020). Fossil-based electricity and heat production are particularly significant contributors to global emissions (Ritchie et al. 2024). While the impact of specific sectors such as electricity, heat production, transport, manufacturing or construction may vary by country, it is clear that achieving climate neutrality by mid-century depends fundamentally on the successful decarbonization of national energy systems.

Drawing on the SGI's Decarbonized Energy System criterion, we assess the extent to which governments are establishing conditions that enable a fully decarbonized energy system by 2050. This transition requires eliminating emissions by phasing out

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carbon-based energy technologies and replacing them with carbon-free technologies and the necessary infrastructure (Lilliestam et al. 2022). To evaluate progress achieved, we first consider key outcome metrics, including:

- the share of renewable energy in total final energy consumption
- the share of fossil fuel-based electricity generation and progress toward zero-carbon targets
- the prevalence of fossil fuel-based heating systems in the residential sector relative to zero-carbon goals
- energy productivity, measured as GDP per megajoule of primary energy in constant 2017 purchasing power parity
- primary energy consumption per capita
- CO<sub>2</sub> emissions from fuel combustion per capita

In a subsequent step, we assess the current policy inputs and outputs of governments to evaluate the objectives and direction of each nation's energy transition trajectory.

#### a. Decarbonized energy system: policy outcomes

With an average score of 6.0 across all key metrics, it is evident that the 30 EU and OECD countries evaluated still have significant ground to cover in transitioning to an emission-free energy system. A closer look reveals wide disparities in individual progress. Notably, even the top performers fall short of achieving the highest possible score of 9 or 10, indicating that even forerunner countries have work to do to fully decarbonize their energy systems (see Fig. 4).

Our analysis of past policy outcomes suggests that Denmark, Latvia and Finland have made the greatest strides in targeting a zero-emission energy system. According to a recent comparative study on energy transition in forerunner countries, **Denmark** could eliminate fossil fuel-based electricity generation by 2029 (Bersalli et al. 2024). The country's rapid expansion of renewable energy, particularly offshore wind, has been instrumental, with offshore wind, bioenergy and solar PV now accounting for 81% of Denmark's power mix

Rank	Country	SGI 2024	
1	Denmark	8.0	
2	Latvia	7.7	
3	Finland	7.5	
4	Portugal	7.4	
5	Norway	6.9	
6	Switzerland	6.8	
7	Sweden	6.7	
8	Slovakia	6.6	
9	Austria	6.4	
	Estonia	6.4	
	Spain	6.4	
12	Greece	6.1	
	Lithuania	6.1	
	Slovenia	6.1	
	United Kingdom	6.1	
16	Ireland	6.0	
	Italy	6.0	
	Poland	6.0	
-	Average unweighted	6.0	
19	Netherlands	5.8	
	New Zealand	5.8	
21	Hungary	5.7	
22	Germany	5.6	
23	Czechia	5.5	
	France	5.5	
25	Belgium	5.2	
	Israel	5.2	
27	Japan	5.0	
28	Australia	4.4	
29	United States	3.6	
30	Canada	3.5	
Unit: Sc	ore.	0 2 4 6 8 10	

Source and metadata: www.sgi-network.org/2024/ Survey\_Structure.

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(International Energy Agency 2023 a). Additionally, Denmark is on track to achieve zero-emission heating thanks to effective alignment across policy targets, institutions, instruments and infrastructure. However, the country still faces challenges in fully transitioning to electric mobility (Bersalli et al. 2024).

**Finland** has also made substantial progress in adopting clean energy technologies, with significant expansion in wind energy and the recent addition of a nuclear reactor. As a result, Finland has the second-lowest reliance on fossil fuels among IEA member countries (see Hiilamo et al. 2024).

#### FIGURE 4 Decarbonized energy system: policy outcomes

In contrast, Canada, the United States and Australia have made the least progress in decarbonizing their energy systems. Following the Paris Agreement, per capita  $CO_2$  emissions from fuel combustion in these countries have seen only minimal reductions. Additionally, their phase-out of fossil-fuel-based electricity and heating systems is progressing at a rate that is insufficient to meet climate goals.

This slow progress also applies to several G7 countries, including France, Italy, Germany, Japan and the UK, where reductions in fossil-based electricity and heating deviate critically from the rates needed to meet targets.

# b. Decarbonized energy system: policy ambition and direction

A comparative analysis of ambition levels and policy coherence in national decarbonization strategies, based on the SGI country reports, suggests that the governments in Finland, France and Spain appear to be firmly committed to transitioning their energy systems by 2050 (see Fig. 5). Notably, the average score for political commitment in energy policy (6.9) surpasses both the score for policy outcomes (6.0) and the score for climate action commitment (6.5). This indicates a degree of governmental recognition of the need to overhaul energy systems by 2050.

Conversely, in countries like Poland, Japan, Israel, Slovakia, Italy, Hungary, Canada and Belgium, political commitment and ambition appear insufficient to drive the timely transformation of the energy sector.

Decarbonization efforts in **Finland** are guided by the country's National Climate and Energy Strategy (NCES), which sets clear, binding targets and a concrete roadmap for achieving them. This strategy includes sector-specific action plans aligned with overarching targets (see Hiilamo et al. 2024).

**Spain's** transition efforts are based on the Integrated Energy and Climate Plan (ENCP) 2021-2030, adopted in December 2020, which similarly includes sector-specific action plans. Additionally, in May 2021, the Spanish parliament passed the Climate Change and Energy Act, which sets national targets for 2030 and specifies measures to meet these targets, as well

Rank	Country	SGI 2	2024
1	Finland	9	
	France	9	
	Spain	9	
4	Denmark	8	
	Germany	8	
	Greece	8	
	Latvia	8	
	Lithuania	8	
	Netherlands	8	
	Portugal	8	
	Slovenia	8	
	Sweden	8	
	Switzerland	8	
	United Kingdom	8	
	United States	8	
16	Austria	7	
	Estonia	7	
	New Zealand	7	
	Norway	7	
_	Average unweighted	6.9	
20	Australia	6	
	Czechia	6	
	Ireland	6	
23	Belgium	5	
	Canada	5	
	Hungary	5	
	Italy	5	
	Slovakia	5	
28	Israel	4	
	Japan	4	
	Poland	4	
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FIGURE 5 Decarbonized energy system: policy ambition and direction

Source and metadata: www.sgi-network.org/2024/ Survey\_Structure.

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as regulations on public procurement. For example, all public tenders must now incorporate criteria for environmental and energy sustainability. Another positive development is the Ministry for the Ecological Transition and the Demographic Challenge (MITECO)'s comprehensive monitoring of autonomous communities, which since early 2022, requires communities to report on their energy and climate plans and provide detailed information on implemented and planned measures (see Kölling et al. 2024).

A closer look at the G7 countries reveals growing disparities in energy transition commitments. While France, Germany, the United Kingdom and the U.S. appear largely committed to achieving a decarbonized energy system, Japan, Italy and Canada demonstrate more limited political resolve. Italy's National Integrated Energy and Climate Plan (Pniec), proposed by the Meloni government, sets lower targets for reducing emissions and expanding renewable energy than required by the EU, indicating a decline in political ambition regarding the energy transition (see Capano et al. 2024). Canada's federal government, meanwhile, has yet to present a definitive roadmap for achieving net-zero by 2050. Although it has supported clean technology development through incentives, these efforts lack concrete performance metrics. Additionally, Canada's substantial investment in a new pipeline for heavy fuel oil signals that Canadian industry is not under a clear government mandate for timely decarbonization (see Howlett et al. 2024).

## c. Decarbonized energy system: overall policy performance

Considering both past achievements and current strategies, Finland, Denmark, Latvia, Portugal, and Spain demonstrate significant readiness for transitioning to a decarbonized energy sector by 2050 (see Fig. 6). Conversely, Canada, Japan, Israel, Poland, Belgium, Australia and Hungary would need to significantly accelerate their efforts to achieve climate neutrality by mid-century.

### **Circular economy:** Strategy development remains in early stages

Through the SGI Circular Economy criterion, we assess the effectiveness of policy strategies in 30 OECD and EU countries in creating conditions for resource-efficient and low-emission production methods. We begin by evaluating each country's status based on metrics like material footprint per capita, GDP per ton of material footprint, municipal waste per capita and the percentage of recycled waste. This initial assessment of circular economy progress is likely a rough and preliminary estimate, as essential metrics – such as the circular material use rate – are not yet available for all 30 countries. Additionally, there are considerable delays in the availability of much country-specific

Rank	Country	SGI 2	2024
1	Finland	8.2	
2	Denmark	8.0	
3	Latvia	7.9	
4	Portugal	7.7	
	Spain	7.7	
6	Switzerland	7.4	
7	France	7.3	
	Sweden	7.3	
9	Lithuania	7.1	
	United Kingdom	7.1	
11	Greece	7.0	
	Slovenia	7.0	
13	Netherlands	6.9	
	Norway	6.9	
15	Germany	6.8	
16	Austria	6.7	
	Estonia	6.7	
18	New Zealand	6.4	
_	Average unweighted	6.4	
19	Ireland	6.0	
20	Slovakia	5.8	
	United States	5.8	
22	Czechia	5.7	
23	Italy	5.5	
24	Hungary	5.3	
25	Australia	5.2	
26	Belgium	5.1	
27	Poland	5.0	
28	Israel	4.6	
29	Japan	4.5	
30	Canada	4.2	
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FIGURE 6 Decarbonized energy system: overall policy performance

source and metadata: www.sgi-network.org/2024/ Survey\_Structure.

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data. Beyond these data limitations, current outcome metrics offer limited insight into each country's ongoing trajectory or potential future progress. In the next step, we will compare the effectiveness of existing circular economy policy initiatives across countries to gain a more nuanced understanding of each one's progress toward achieving a circular economy.

#### a. Circular economy: policy outcomes

Beginning in 2016, several EU member states gradually introduced extensive circular economy strategies, roadmaps and action plans. Belgium, Finland and the

Netherlands were the first to announce national policies in 2016, with 20 other EU countries following between 2017 and 2022. Many of these planning efforts encountered substantial institutional challenges and setbacks (see European Environment Agency 2024).

The limited metrics available on policy outcomes suggest that Italy, Germany and Spain are relatively well-positioned to begin their transition to a circular economy (see Fig. 7). However, examining the status of this transition across affluent democracies reveals that the entire process remains at an early stage. With an average score of 6.1, industrialized nations face a long journey in decoupling economic growth from resource consumption.

#### b. Circular economy: policy ambition and direction

To what extent are current political guidelines and policy measures supporting the transition to a circular economy? With an average score of 6.3 in policy ambition and direction, it is clear that many governments are still hesitant to embrace the shift from material consumption to circular economic practices.

In 20 of the 30 countries examined, there is a slow movement toward circularity. However, at this early stage of what could become a major socio-technological transformation, most governments are primarily focused on formulating comprehensive policy strat-

FIGURE 8 Circular economy: policy ambition and direction



#### FIGURE 7 Circular economy: policy outcomes

Source and metadata:

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Source and metadata: www.sgi-network.org/2024/ Survey\_Structure.



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egies, drafting action plans, exploring scenarios and gathering relevant indicators. Nonetheless, few countries have reached the point of aligning these policies with ambitious goals or crafting strategies to facilitate effective implementation.

On the other end of the spectrum, there are 10 countries where political commitment to a circular economy transition remains uncertain. In some cases, like Israel, Hungary, Canada, Australia and Switzerland, either policy strategies were lacking altogether or existing plans were fragmented and disjointed between January 2022 and January 2024. In other cases, like the Netherlands – formerly a forerunner in circular economy efforts – slow progress on key indicators and the absence of a government-wide approach raise questions about the country's commitment to achieving a fully circular economy by 2050 (see Hoppe et al. 2024).

Examining the ambition and coherence of national circular economy strategies and action plans, two countries in particular – Sweden and Finland – stand out for their comprehensive commitment to advancing the transition.

In 2016, **Finland**, with support from the government-backed Sitra Finnish Innovation Fund, became the first country to introduce a national circular economy roadmap. An updated version was released in 2019. This roadmap reflects a collaborative national effort, encompassing goals like reduction, durability, reuse and recycling. Engagement includes various stakeholders, from government ministries to representatives from the public, private and nonprofit sectors. For the second edition, Sitra solicited ideas and feedback through events, expert interviews and a public comment period open to all Finnish citizens. However, it should be noted that the roadmap is non-binding, having been created independently of the government (see Hiilamo et al. 2024).

In **Sweden**, both the Circular Economy strategy and its action plans, while not legally binding, are evaluated as part of the national budget alongside other environmental goals. Various stakeholders, including agencies, regions and municipalities, are responsible for tracking progress. Nonetheless, binding measures are being implemented for specific areas within the action plan. For instance, in waste management, seven new regulations were introduced in 2024, mandating the sorting of non-liquid food waste, liquid grease and separation of packaging materials (see Petridou et al. 2024).

# c. Circular economy: overall policy performance

Based on the available metrics and current policy strategies, Italy and Sweden have shown greater progress in preparing for the transition to a circular economy than other surveyed countries. **Italy** introduced a new national Circular Economy Strategy in 2020, presenting a thorough, sector-specific roadmap. This includes guidelines on consumer responsibilities,

FIGURE 9 Circular economy: overall policy performance

Rank	Country	SGI 2024
1	Italy	7.8
2	Sweden	7.7
3	United Kingdom	7.4
4	Germany	7.3
5	Finland	7.2
	France	7.2
	Spain	7.2
8	Latvia	6.9
9	Belgium	6.8
	Czechia	6.8
	Japan	6.8
	Slovenia	6.8
13	Austria	6.7
	Estonia	6.7
15	Denmark	6.6
16	Greece	6.4
17	Portugal	6.2
-	Average unweighted	6.2
18	Poland	6.0
19	Slovakia	5.9
20	Norway	5.8
	United States	5.8
22	Hungary	5.6
	Switzerland	5.6
24	Lithuania	5.5
	Netherlands	5.5
26	Ireland	5.2
27	New Zealand	4.8
28	Australia	4.3
29	Canada	4.1
30	Israel	3.3
Unit: Sc	ore.	0 2 4 0 0 10

Source and metadata: www.sgi-network.org/2024/ Survey\_Structure.



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models for green public procurement, waste management, job creation, new material supply chains, circular resource use, digitalization's role and environmental finance and taxation. Macro-objectives are clearly defined with targets set for 2035, alongside indicators and data sources that undergo annual review. Under the Draghi administration, Italy demonstrated strong commitment by renaming the Ministry of Environment to the "Ministry for Ecological Transition" and empowering it to coordinate strategies across multiple ministries - Economic Development, Finance, Agriculture, Infrastructure, Education and Health - as well as with regions, autonomous provinces and the National Association of Italian Municipalities. However, it remains uncertain whether the current Meloni administration will maintain this momentum for reform (see Capano et al. 2024).

## **Conclusion and outlook**

Assessing the extent to which affluent democracies are advancing toward climate-neutral and circular economies requires more than a review of past policy outcomes, such as emissions levels and material footprints. While these indicators reflect past achievements, they offer limited insight into current government direction. Consequently, we need leading indicators that reveal whether today's policy guidelines and measures are supporting a true transformation.

For affluent democracies aiming to make their economies climate-neutral and circular, forward-looking policy strategies are essential. These strategies must effectively align goals, institutions and policies. By contrasting past policy outcomes based on available metrics with contemporary strategies and directions – evaluated through SGI scores and expert assessments for the "Climate Action," "Decarbonized Energy System" and "Circular Economy" criteria – we gain a more nuanced understanding of each country's readiness for this transformation. Moreover, our metrics for policy ambition, coupled with our composite performance metric, serve as early warning indicators, signaling whether political shifts are yet reflected in recent quantitative outcome measures.

The findings across the three SGI criteria reveal that affluent democracies with ambitious and cohesive

climate strategies have also frequently devised effective policy approaches for transforming their energy systems and, to a lesser degree, for circular economic development. A strong correlation (r: 0.8) is evident between our climate action policy effort measure and that for a decarbonized energy system.

France and Italy emerge as notable exceptions. Although France is pursuing an overhaul of its energy system by 2050, its climate action framework appears to need stronger political commitment. The Haut Conseil pour le Climat recently reported that only six of the 25 objectives in the national low-carbon strategy have been sufficiently supported by implementation measures. Additionally, the council has raised concerns over the national budget and waning support for climate change mitigation (see Grossman et al. 2024). In Italy, the Meloni administration's National Integrated Energy and Climate Plan (Pniec) sets lower targets for emissions reductions and renewable energy expansion than EU benchmarks, suggesting a potential decrease in commitment to the energy transition (see Capano et al. 2024).

A moderately strong correlation (r: 0.6) also exists between our climate action efforts measure and those focused on a circular economy. However, the circular economy transition is largely in its infancy. Of the 30 countries surveyed, 20 appear to be moving only gradually toward circularity. At this early stage, which may herald a significant socio-technological shift, most governments are focused on developing comprehensive policy strategies, action plans, scenario analyses and relevant indicators. Nevertheless, none of the surveyed countries seem to have reached the stage of aligning policies with their ambitious goals or establishing strategies for effective, rapid implementation.

Reviewing performance outcomes across the three SGI criteria, it is clear that no country is fully prepared to achieve a climate-neutral and resource-efficient economy in the foreseeable future. Even forerunner countries like Sweden, Finland, Spain and Denmark face significant challenges (see Fig. 10). Although their policy frameworks are generally ambitious and coherent, with clearly defined goals, sector-specific targets, action plans and rigorous monitoring systems, they still exhibit several inconsistencies and embedded tensions.



FIGURE 10 Overall performance: circular economy, decarbonized energy system and climate action

It is therefore essential to closely examine potential barriers to progress. This includes better alignment of policy goals with existing regulations, such as fossil fuel subsidies. Additionally, more robust safeguards are often needed to ensure the effective implementation of climate transition policies at all levels of government - a critical area for policymakers to address. Lastly, it remains unclear whether courts can effectively assess the achievement of climate goals.

While focusing on specific sectoral barriers is important, this alone does not guarantee the success of transformational policy strategies. For these strategies to succeed, it is vital to consider the broader political context. Transformational policies generally thrive in political environments that reinforce their legitimacy. Therefore, our dataset not only highlights sector-specific opportunities and challenges in circular economy,

climate and energy policies, but also monitors progress in areas like democratic accountability, anticipatory governance and other key aspects of economic, social and environmental policy.

A primary consideration is whether other economic, social and environmental policies can mitigate the risks of individual transformations. Welfare states capable of pursuing policies that integrate sustainability, empowerment and protection often develop more ambitious and coherent transformation strategies. We observe moderate to strong correlations between our aggregate measure of social sustainability and climate action performance (r: 0.7), economic sustainability and climate action performance (r: 0.6), and environmental sustainability and climate action performance (r: 0.7).

The second aspect relates to the machinery of government itself and the ways in which problems of coordination, consensus-building and sensemaking can be addressed by the politico-administrative system. Governments that regularly evaluate and adapt their structures, procedures and tools to enhance efficiency, effectiveness and foresight generally develop more cohesive and sustainable policy strategies. We find a significant correlation between the measure of climate action policy efforts and the aggregate measure of "governing with foresight" (r: 0.7).

The third aspect addresses the extent to which state power is limited and the degree to which the population, non-state actors and other state institutions can hold the executive accountable. Countries with strong democratic accountability systems are typically more effective in creating enduring policy strategies for economic transformation. A strong correlation exists between our measure of climate action policy efforts and the measure of democratic governance (r: 0.8).

The SGI dataset offers a comprehensive resource for comparing and tracking progress, using key indicators to assess how well public governance frameworks in various OECD countries support a shift toward a climate-neutral, resource-efficient economy. We encourage future research to explore this extensive dataset further to deepen our understanding of the factors that drive and sustain the legitimacy of sustainable transitions.

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### © Bertelsmann Stiftung, Gütersloh December 2024

#### Published by

Bertelsmann Stiftung Carl-Bertelsmann-Straße 256 33311 Gütersloh Telefon +49 5241 81-0 www.bertelsmann-stiftung.de

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#### Please cite as follows

Christof Schiller/Thorsten Hellmann. Toward Climate Neutrality and a Resource-Efficient Economy: Policy Progress in Affluent Democracies. Policy Brief "Sustainable Governance in International Perspective" 2024/02. Gütersloh, Bertelsmann Stiftung. International Energy Agency (2023 a). Denmark 2023. Energy Policy Review https://iea.blob.core.windows.net/assets/9af8f6a2-31e7-4136-94a6-fe3aa518ec7d/Denmark\_2023.pdf Accessed on: Oct. 16, 2024

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#### The Sustainable Governance in International

**Perspective** policy brief is a joint product of the Sustainable Governance Indicators SGI (www.sgi-network.org) and the Transformation Index BTI (www.bti-project.org) teams at the Bertelsmann Stiftung.

The **Transformation Index** assesses the quality of democracy, market economy and governance in 137 developing and transformation countries on a biennial basis.

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#### Copy Editing

Barbara Serfozo

Layout Markus Diekmann, Bielefeld

#### Title

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#### Printing

Hans Gieselmann Druck und Medienhaus GmbH & Co. KG

DOI 10.11586/2024164

ID2459

Bertelsmann Stiftung