Government Energy Spending Tracker

December 2022 update

International Energy Agency

IEA

INTERNATIONAL ENERGY AGENCY

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In this report

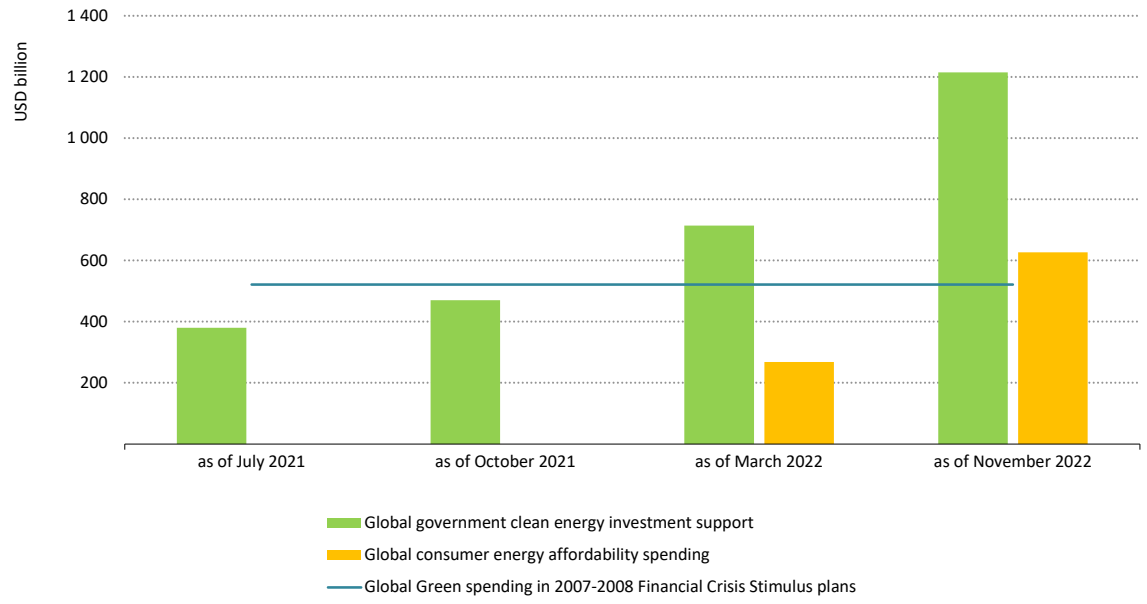
In response to the Covid-19 pandemic and the global energy crisis, governments worldwide have mobilised an unprecedented amount of fiscal support aimed at stabilising and rebuilding their economies – much of it also reinforcing clean energy transitions.

The IEA *Government Energy Spending Tracker*, formerly the *Sustainable Recovery Tracker*, provides periodic updates on the latest approved policies and their fiscal contributions to energy. The latest update, issued in December 2022, focuses on clean energy investment support and short-term energy affordability measures introduced by governments. This latest update tracks almost 1 600 government financial measures from 67 countries, all of which are tracked in the IEA's Policies and Measures (PAMS) database.

Key findings

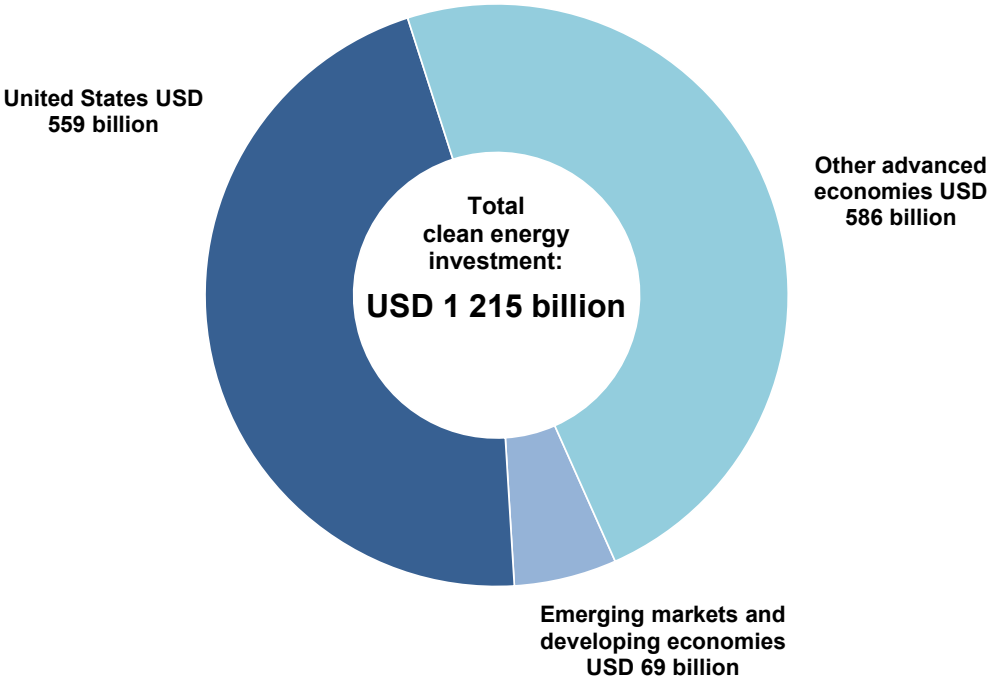
- The fourth and latest update of the IEA *Government Energy Spending Tracker* encompasses almost 1 600 government financial measures from 67 countries. Economic recovery packages enacted by governments worldwide from the start of the Covid-19 crisis until October 2022 now represent USD 1 215 billion in clean energy investment support, well over twice the financial commitments made to green recovery measures after the 2007-2008 financial crisis.
- The global energy crisis has made energy affordability the primary focus for new energy-related government spending. Advanced economies have, however, also continued to support clean energy investment since the Russian Federation's (hereafter “Russia”) invasion of Ukraine, while countries with fewer fiscal resources have concentrated on protecting consumers.

Government spending for clean energy investment support and short-term consumer energy affordability measures



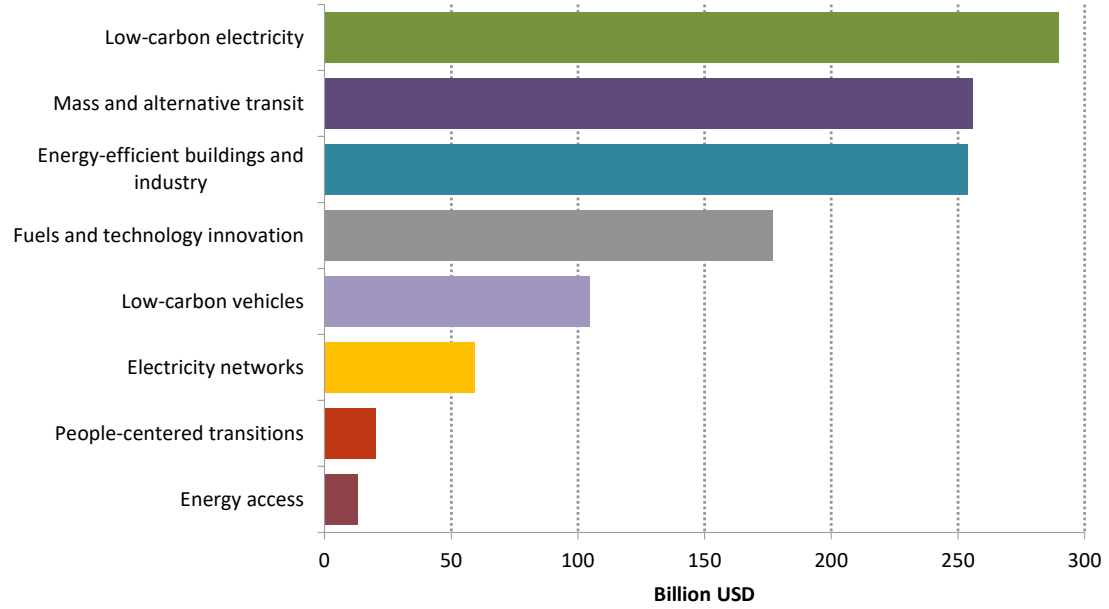
- Advanced economies have earmarked almost USD 1 145 billion for clean energy investment support – around 95% of the global amount since the beginning of the Covid-19 crisis. The United States accounts for nearly half of this total, followed by the European Union (hereafter “EU”) (37%). The US Inflation Reduction Act alone directs USD 370 billion for boosting clean energy investment. Supplementary amounts are under consideration within the framework of REPowerEU, as well as in next years' national budgets in Finland, France, Germany, Ireland, Portugal, the United Kingdom, Japan, and Korea.

Total government clean energy investment support enacted since the Covid-19 crisis, by region



- The largest share of investment support is earmarked for low carbon electricity (USD 290 billion), followed by mass and alternative transit (USD 256 billion, with almost half of that going to high-speed rail) and energy-efficiency improvements in buildings and industrial sectors (USD 254 billion, half of which are dedicated to energy-efficient retrofits). Low carbon and clean fuel and technology innovation (USD 177 billion) is next.

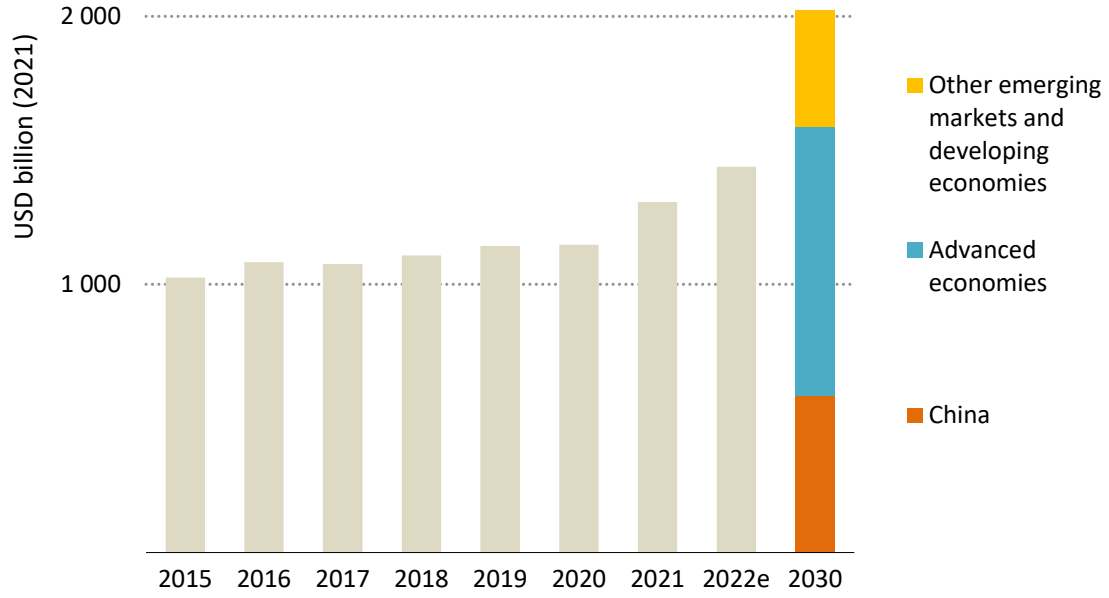
Government clean energy investment support enacted since the start of the Covid-19 crisis, by sector



Notes: Mass and alternative transit covers the following sub-sectors: mass transit, high-speed rail, urban buses, charging infrastructure, walkways and bikeways. Low-carbon vehicles encompasses the following ones: Electric and efficient passenger vehicles, light and heavy trucking, shipping and aviation.Only government spending targetting specific sectors, and not general clean energy technology support, are represented here.

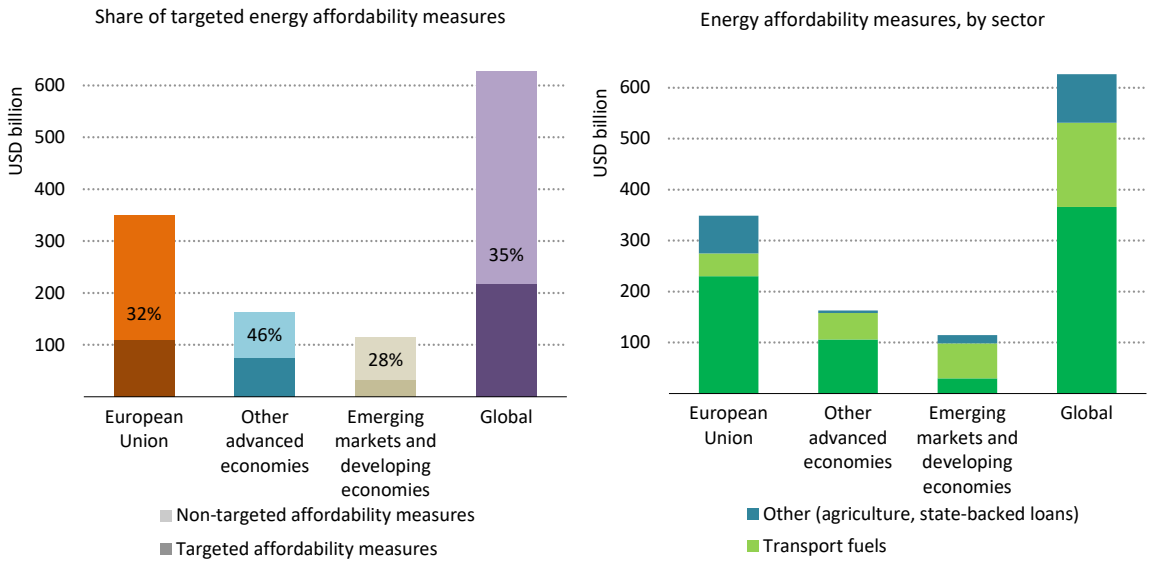
- Government spending is set to encourage substantial flows of private investment to clean energy by improving long-term market attractiveness in certain regions, and bolstering project pipelines, particularly in advanced economies. Global annual clean energy investment under today's stated policies is set to grow by nearly 50% to reach over USD 2 trillion in 2030.

Annual average clean energy investment by region in the Stated Policies Scenario compared to historic levels, 2015-2030



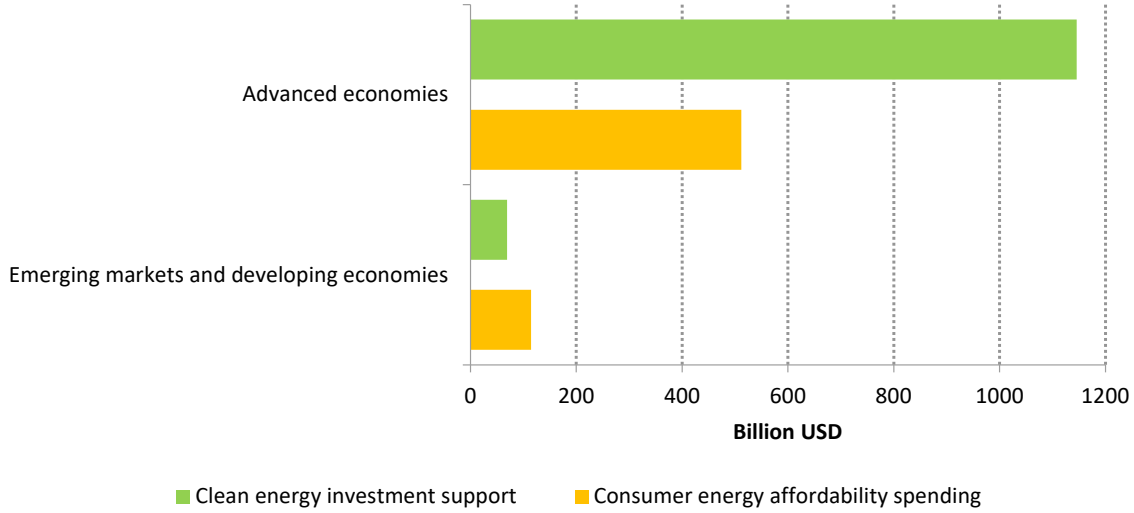
- Government spending earmarked for keeping energy affordable for consumers has reached almost USD 630 billion. Advanced economies represent more than 80% of this total, with the European Union making up over half. More economic support is currently under consideration, and is likely to grow as the energy crisis continues.
- Short-term government interventions have helped shield consumers and businesses from the full brunt of price shocks but are draining countries' fiscal capacity. The financial burden of sustaining these efforts in an inflationary environment is under debate and is testing financial market confidence in some nations.
- Governments must weigh the timely withdrawal of price supports against their long-term implications for public finances and social equity. Adequately targeting vulnerable households and businesses can reduce these burdens, however only about 35% of short-term affordability measures are explicitly aimed at households most in need or enterprises disproportionately exposed to the effects of high energy prices. More precise targeting can minimise the diluting effects that energy price subsidies have on payback periods for clean energy investments.

Government energy affordability spending earmarked, by region and sector, 2021



- Maintaining affordability measures amidst ongoing inflation is becoming fiscally unsustainable for many developing countries. Emerging market and developing economies have so far mobilised USD 114 billion in short-term energy affordability measures, mostly directed at limiting the rise in transport fuel prices, followed by cooking fuels and electricity. This total does not include price capping borne by energy companies without government budgetary support, which are likely to contribute further to mounting public and private debt. These costs, along with the high cost of capital, are set to hinder much-needed energy investment in the developing world, where investment to provide energy access is set to slow. Multi-lateral support remains critical to increasing energy investment in these regions.

Government clean energy investment support and consumer energy affordability spending earmarked, by region



Tracking sustainable recoveries

The *Government Energy Spending Tracker*

This fourth update of the *Government Energy Spending Tracker*, formerly known as the *Sustainable Recovery Tracker*, assesses the level of government direct spending flowing toward energy. The update of the Tracker accounts for such spending since April 2020 to end of October 2022.

The Tracker relies on extensive policy analysis conducted by the IEA. It includes around 1 600 energy-related government policies and spending programmes from 67 countries through the Policies and Measures (PAMS) database. All governments spending allocated to energy sustainability and affordability policies as of 1 September 2022 were incorporated into the Global Climate and Energy Model for analysis in the World Energy Outlook 2022 in the Stated Policies Scenario, which provides an assessment of how this government spending contributes to rising levels of clean energy investment.

The *Government Energy Spending Tracker* measures two types of energy spending: clean energy investment support and consumer energy affordability measures.

- **Clean energy investment support** includes all government spending that directly underpins increasing levels of clean energy investment.
- **Consumer energy affordability measures** includes all measures intended to help consumers and enterprises weather high energy prices in light of the global energy crisis. This category includes policies enacted by governments in response to the international price rise that materialised in the fourth quarter of 2021 and was further aggravated by Russia's invasion of Ukraine.

The IEA also tracks energy subsidies via a price gap methodology.

The 2022 IEA Global Energy and Climate Model documentation provides additional information on policy collection specifics for government recovery spending.

The IEA *Government Energy Spending Tracker* was initially published as the Sustainable Recovery Tracker on 21 July 2021, as requested by the G20 Rome Leaders' Declaration, and the Joint G20 Energy-Climate Ministerial Communiqué. It benefitted from the support of the Italian G20 Presidency and is currently supported by the IEA Clean Energy Transitions Programme.

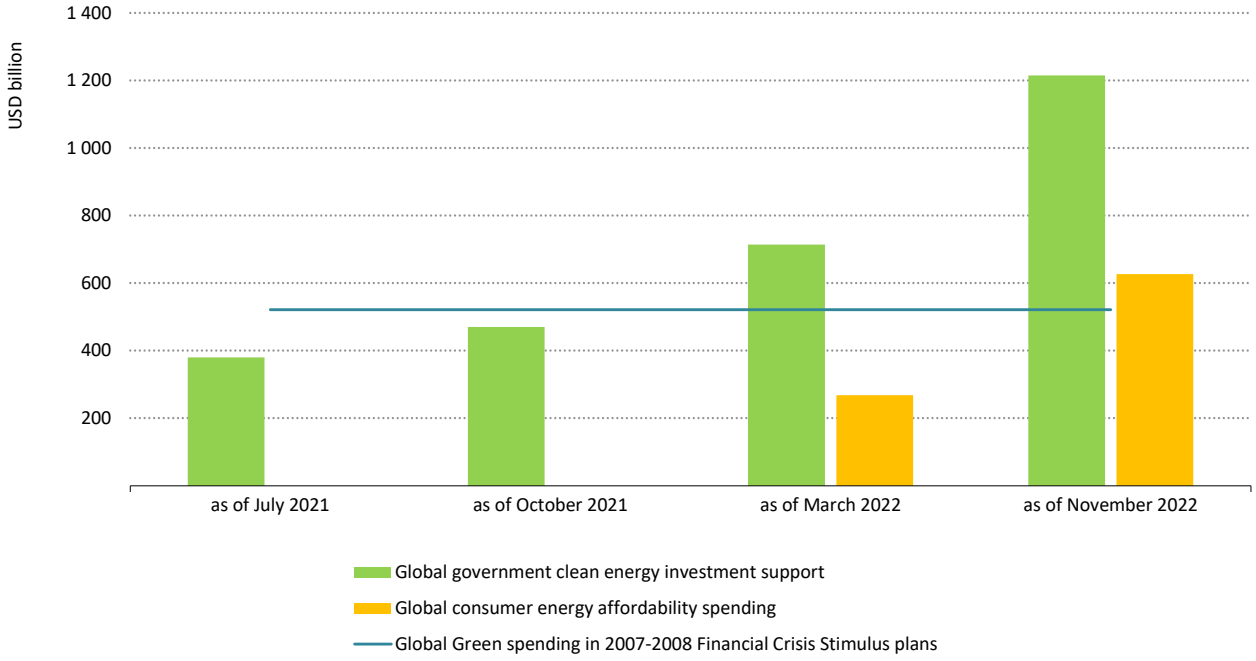
IEA *Government Energy Spending Tracker* - December 2022 update

Government clean energy investment support enacted since the start of the Covid-19 crisis now totals USD 1 215 billion

Economic recovery packages enacted by governments worldwide since April 2020 represent USD 1 215 billion in clean energy investment support, well over twice the financial commitments made to green recovery measures after the 2007-2008 financial crisis.

This fiscal effort represents almost 1 600 government financial measures enacted in 67 countries. The rise in government clean energy investment support is however mostly from new or confirmed packages adopted in advanced economies, notably in response to the more recent global energy crisis.

Government spending for clean energy investment support and short-term consumer energy affordability measures



Since the last update of the Tracker, governments allocated roughly another USD 500 billion in clean energy investment support. The largest addition since the last update comes from the United States' Inflation Reduction Act, which contributed a supplementary USD 370 billion to clean energy investment support. Many EU member states (Austria, Denmark, Finland, France, Germany, Sweden, Lithuania, Luxembourg, the Netherlands), the United Kingdom and Norway also allocated fresh funding to boost clean energy investment. Much of this spending came in the context of larger budget outlays which nominally addressed domestic inflation and energy security. Energy

efficiency and low-carbon power generation incentives were enacted in efforts to curb natural gas consumption. In addition, a few previously announced Covid-19 related measures were also officially approved in Europe in the last few months, notably in Poland.

Newly enacted measures have much longer spending time-horizons than the initial response to the Covid-19 pandemic, which prioritised bolstering near-term economic activity. Many new policies focus on longer-term transformations, including support meant to enhance the competitiveness of domestic manufacturing of clean energy technologies and to provide long-term investment certainty amidst a deteriorating economic outlook.

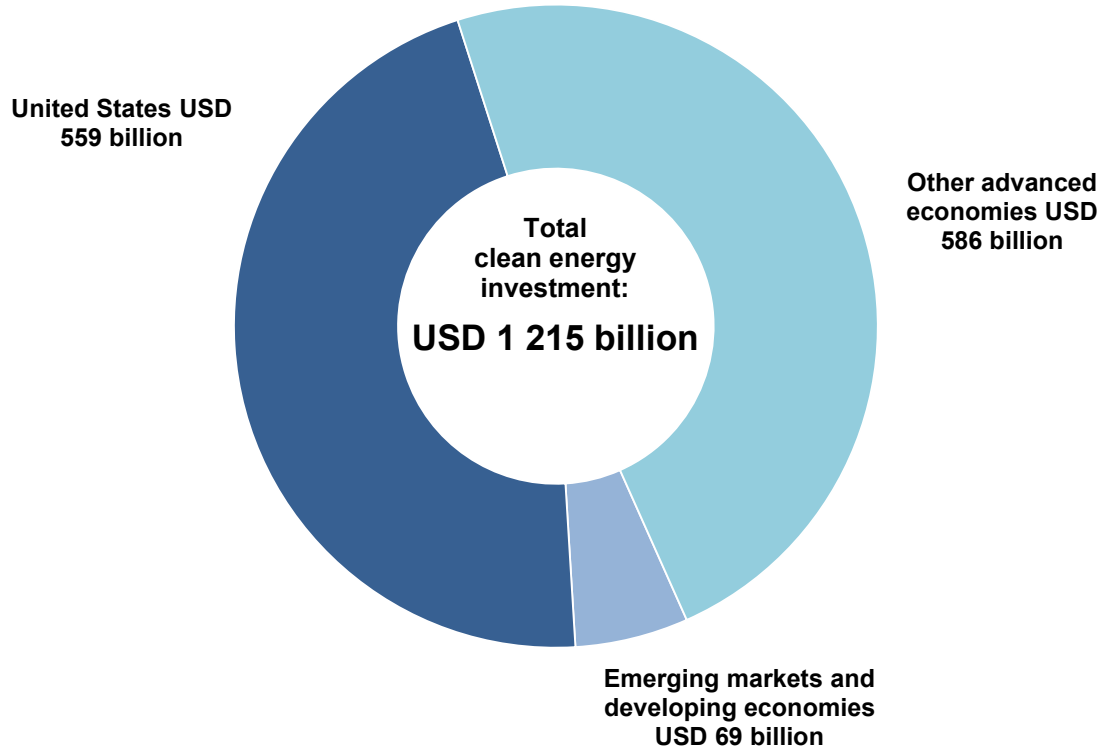
Only advanced economies have enacted new clean energy investment support since the start of the global energy crisis

Around 95% (USD 1 145 billion) of the clean energy investment support identified is in advanced economies. This number was 90% in the previous editions of the Tracker, confirming a widening gap between advanced economies and emerging market and developing economies. Many emerging market and developing economies continue to face rising levels of debt and high levels of inflation, which is further restricting their fiscal means. Accordingly, they have focused their limited resources on keeping energy affordable for their consumers and enterprises.

The United States now represent over 45% of the total clean energy investment support effort identified in the Tracker, with around USD 560 billion to be disbursed by 2031. The bulk of this spending was contained in two Acts: the US Inflation Reduction Act enacted in August 2022, and the Infrastructure Investment and Jobs Act from November 2022. These allocate the most to low-carbon power (over USD 200 billion, mostly in the form of tax credits and incentives) followed by low-emission vehicles (USD 100 billion). Many of these incentives are available until 2031, with some major ones not having caps on the total level of support disbursed.

EU countries have committed roughly USD 450 billion in clean energy government spending. In addition, many of them (notably Finland, France, Germany, Ireland, Portugal) are planning new outlays on clean energy, or saw final parliamentary or executive steps taken to enact 2023 budgets as this publication was being finalised. The REPowerEU plan, which aims to urgently reduce demand for fossil fuels, is also expected to further focus government fiscal plans towards clean energy sectors in the coming years. It notably enables a repurposing of Recovery & Resilience Facility loans as well as the use of revenues from Emission Trading System Market Stability Reserve allowances.

Total government clean energy investment support enacted since the Covid-19 crisis, by region

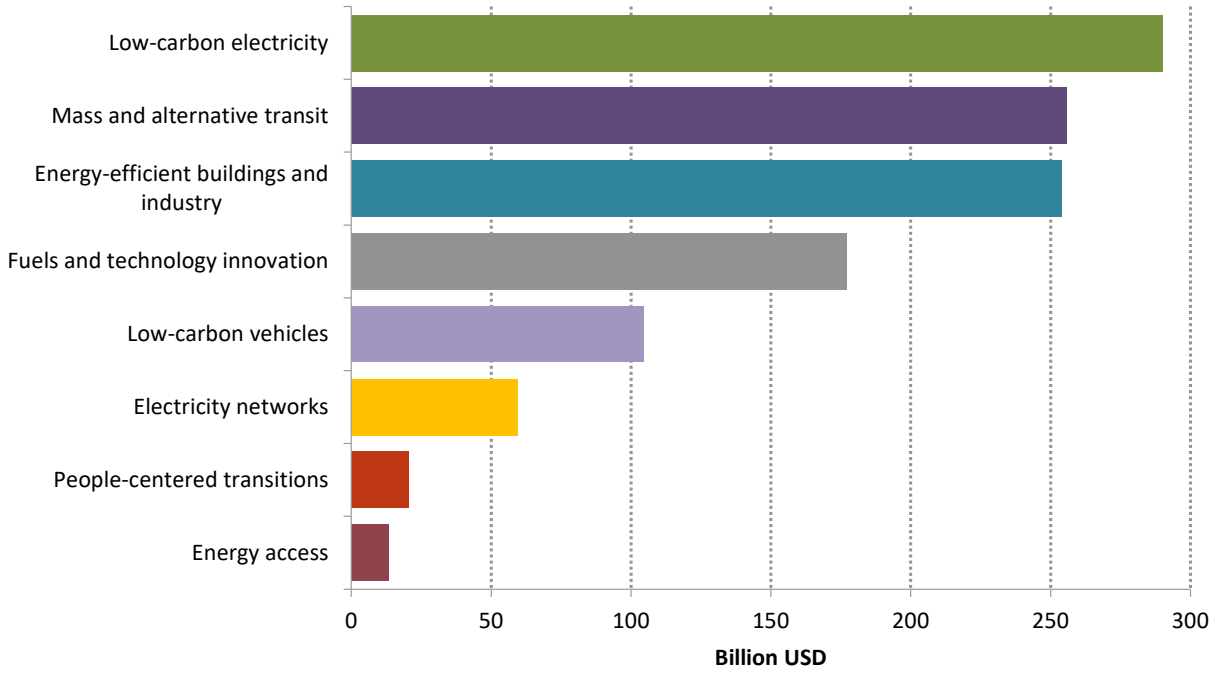


New government spending puts increasing emphasis on the power sector

Since the last update of the *Government Energy Spending Tracker*, the low-carbon electricity sector has seen the greatest increase in resources (over four-fold), mostly due to the substantial tax credits provided by the US Inflation Reduction Act. This is followed by energy-efficiency improvements in buildings and industrial sectors, which has seen an increase of over USD 130 billion, again due to the US Inflation Reduction Act, as well as to new measures enacted by EU countries (Denmark, Finland, France, Germany, Italy, Lithuania, Spain) and the United Kingdom.

This means the largest share of clean energy investment support is now heading to low-carbon electricity (USD 290 billion), followed by mass and alternative transit (USD 256 billion, almost half of which goes to high-speed rail). Next are energy-efficiency improvements in buildings and industrial sectors (USD 254 billion, half of which is being dedicated to energy-efficient retrofits) and clean fuel and technology innovation (USD 177 billion).

Government clean energy investment support enacted since the start of the Covid-19 crisis, by sector



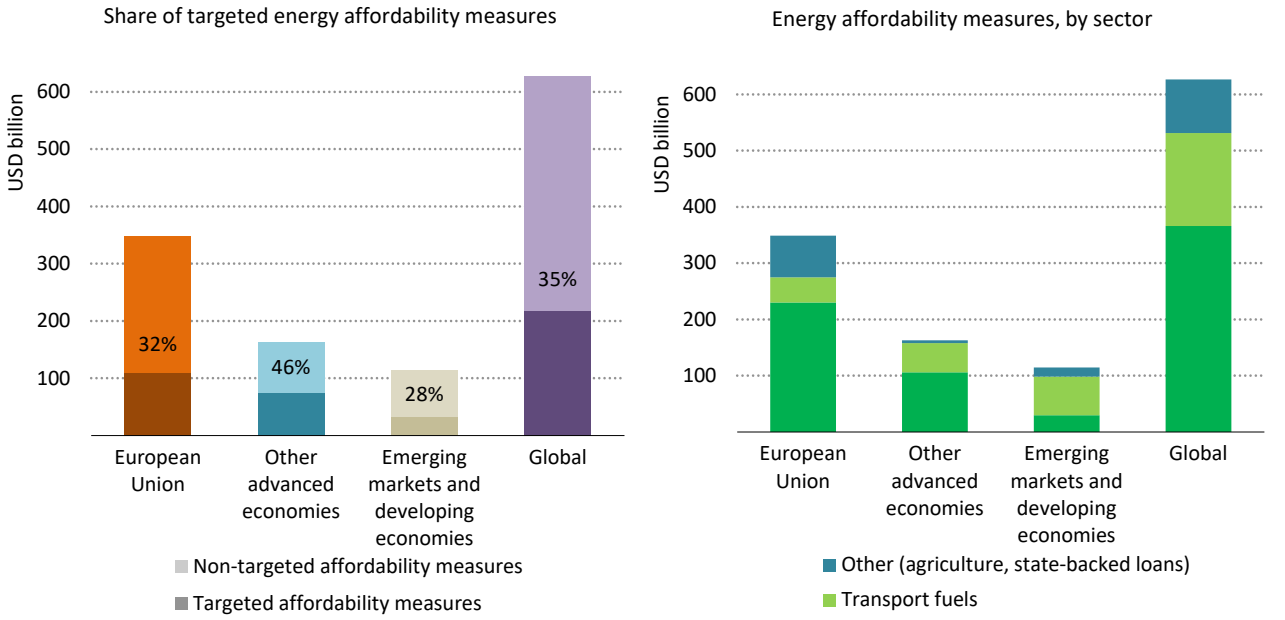
Notes: Mass and alternative transit covers the following sub-sectors: mass transit, high-speed rail, urban buses, charging infrastructure, walkways and bikeways. Low-carbon vehicles encompasses the following ones: Electric and efficient passenger vehicles, light and heavy trucking, shipping and aviation. Only government spending targetting specific sectors is included, and omits general clean energy technology support without specified target sectors or technologies.

Ensuring government clean energy investment support achieves its goals may prove challenging in the near-term

Government clean energy investment support is set to increase investment substantially by changing the long-term market attractiveness in certain regions and bolstering project pipelines. Global annual clean energy investment under today's stated policies is set to grow by nearly 50% from today's levels by the end of the decade, reaching over USD 2 trillion in 2030.

Uncertain near-term growth perspectives, however, may hamper private investment, as already reported in the last few months (IMF, 2022). Accordingly, government spending is expected to play an increasingly influential role in attracting investment to clean energy.

Annual average clean energy investment by region in the States Policies Scenario compared to historic levels, 2015-2030



Speed to market will determine the final impact of government interventions, as the uncertain economic outlook, tighter financial conditions and continued supply chain disruptions may slow disbursements. Upfront costs of large infrastructure projects, exposure to price spikes, and continued problems with international supply chains risk deterring sufficient levels of private investment.

Consumer-oriented spending on clean energy – such as on electric vehicles, retrofits and heat pumps – also faces delivery challenges. Schemes to subsidise energy-efficient retrofits, as well appliance and heating upgrades enacted in France and Italy, are having difficulty keep up with the uplift in demand. The rising cost of living also means incentives have to consider consumers' reduced ability to pay for upgrades with higher upfront costs, forcing many to consider low-efficiency alternatives. Some measures, such as the provisions in the US Inflation Reduction Act supporting efficient second-hand electric vehicle purchases, are aimed at addressing such issues.

There are also a growing number of direct manufacturer tax credits or direct subsidies (amounting to around USD 90 billion to date). These, as well as conditions related to sourcing, have raised questions about their impact on international supply chains. Policymakers will need to balance domestic clean energy investment support with global trade rule adherence.

Key government clean energy investment support policies newly added to the IEA *Government Energy Spending Tracker*

Sector	What is included?	Total government spending enacted	Common policy types employed	Challenges	Selected measures added since April 2022 update
Low-carbon electricity	Solar, wind, bioenergy, hydro, nuclear, and other renewable power.	USD 290 billion	- Regulated cost-recovery. -Tax credits. - Government-backed auctions. - Improving financial securitisation renewable power.	- Administrative delays, permitting, interconnection, public resistance to new projects. - Supply chain constraints. - Commodities and material shortages/price spikes. - Insufficient government programmes and infrastructure to support construction, especially offshore wind.	- US Inflation reduction Act: provision of investment and production tax credits for low-carbon power capacity deployment. - Austria Inflation Relief Package (Entlastungspaket 2): financial incentives for fuel to renewable energy switch among energy-intensive companies, and direct government investments in wind and solar. - Norway 2022 Revised national budget: direct funding to studies and ground investigations on offshore wind development in the North Sea.
Fuels and technology innovation	Hydrogen, Carbon-capture sequestration, batteries, small modular nuclear reactors, other digital technologies, biofuels, biogas, and methane leak prevention.	USD 177 billion	- Tenders. - Loan guarantees. - Subsidies/tax breaks. - Grants to pilot programmes & RD&D activities. - International RD&D partnerships/international trade partnerships (H_2).	- Low rates of return and high cost of capital for pilot projects. - Know-how and private sector expertise. - Lack of existing government R&D programmes. - Private sector may lack ample R&D capacity to respond to incentives. - Some technologies (H_2, batteries) are more favoured than others (Carbon capture, utilisation and storage [CCUS]).	- Lithuania government price crisis response: financial support for technical equipment to companies developing RE-based hydrogen production; direct investments in biofuel production. -US Inflation reduction Act: extension of clean production fuel credit for biofuels, grants to CCUS projects and credit for thermal storage projects.

Sector	What is included?	Total government spending enacted	Common policy types employed	Challenges	Selected measures added since April 2022 update
Mass and alternative transit	Mass transit, rail, urban buses, charging infrastructure, walkways and bikeways.	USD 256 billion	- Consumer subsidies. - Support and mandates for manufacturers (subsidies, tax breaks, R&D funding, loan guarantees, fuel efficiency standards). - Public procurement for public fleets. - Direct spending/PPPs for infrastructure building (charging stations, low-carbon fuelling). - Funding for low-carbon fuelling pilots at ports, cross-docks, and airports.	- Local manufacturers not prepared to ramp up production for alternative. - Supply chain constraints. - Commodities and material shortages/price spikes. - Charging and low-carbon fuelling infrastructure chicken-egg problem. - Targeting infrastructure that will not happen without government support. - Targeting incentives to incremental market. - Overcoming public and private company reticence to adopt new technologies. - Heavy transport technology not ready for scale. - Co-ordination with subnational authorities or SOEs. - Public approval process of placing infrastructure. - Infrastructure plans can initially weigh heavily on public budget.	- Germany Development and Resilience Plan (Deutscher Aufbau- und Resilienzplan): subsidies for refuelling and charging infrastructures, as well as low-carbon buses and rail development projects. - Australia 2022-2023 federal budget: direct investment in hydrogen vehicle refuelling stations and set up of a National Electric Vehicle Charging Network. - US Inflation Reduction Act: grants for improving of walkways with a focus on disadvantaged communities.
Low carbon vehicles	Electric and efficient passenger vehicles, light and heavy trucking, shipping and aviation.	USD 105 billion	- Consumer subsidies. - Support and mandates for manufacturers (subsidies, tax breaks, R&D funding, loan guarantees, fuel efficiency standards). - Public procurement for public fleets. -Direct spending/PPPs for infrastructure building (charging stations, low-carbon fuelling).	- Local manufacturers not prepared to ramp up production for alternative. - Supply chain constraints. - Commodities and material shortages/price spikes. - Charging and low-carbon fuelling infrastructure chicken-egg problem. - Targeting infrastructure that will not happen without government support.	- France Power Purchasing Act (Loi Pouvoir d'Achat): enlarged subsidies for electric bike purchase. - Italy (Fondo automotive): a dedicated fund to subsidise low-emission vehicle purchase. - US Inflation Reduction Act: grants, loans and tax rebates for low carbon vehicles, both producer/innovator and consumer-oriented. Some target second-hand vehicles.

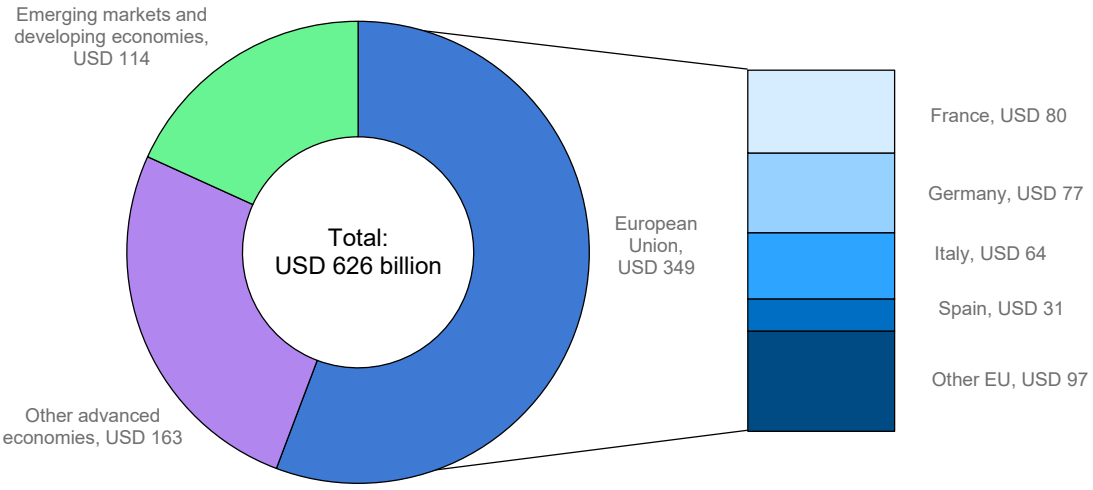
Sector	What is included?	Total government spending enacted	Common policy types employed	Challenges	Selected measures added since April 2022 update
Low carbon vehicles (continued)			- Funding for low-carbon fuelling pilots at ports, cross-docks, and airports.	- Targeting incentives to incremental market. - Overcoming public and private company reticence to adopt new technologies. - Heavy transport technology not ready for scale.	
Energy-efficient buildings and industry	Energy efficiency retrofits (buildings and industry), efficient appliances, near net zero new buildings, end-use renewables (e.g. solar thermal, geothermal).	USD 254 billion	- Direct spending/PPPs for infrastructure building (walkways, bike lanes, multi-modal options).	- Lack of consumer-oriented offer and dedicated administrative processes. - Effective channelling depends on pre-existing energy efficiency programmes. - Subsidies and tax break effect will ultimately depend on consumer's budget. - Higher cost financing due to small projects and revenue streams from efficiency hard to count as secure revenue. - Payback risks if ownership changes hands, or business longevity is uncertain. - Lack of qualified practitioners make retrofits fall short of potential.	- Canada: new federal Green Building Strategy to boost building retrofit rates and net zero buildings; direct investment in energy-efficient improvements in provinces. - France "Zero Fossil Industry" call for projects focused on biomass-based heat generation, and industrial decarbonisation/efficiency. - Poland National recovery Plan: direct investment in energy efficient retrofits in housing, schools, in district heating and cooling systems. - United Kingdom: Boiler Upgrade Scheme and Heat Pump ready programme: subsidies to household heating fuel switch extension/revamping.

Sector	What is included?	Total government spending enacted	Common policy types employed	Challenges	Selected measures added since April 2022 update
Electricity networks	Transmission, distribution, grid-side batteries, smart grid investment.	USD 60 billion	- Consumer subsidy and tax incentives. - Energy efficiency incentives and requirements on utilities and appliance manufacturers. - Direct spending on public buildings/PPPs for large-scale retrofit plans. - Free efficiency audits. - Local energy efficiency funding distributors, with accredited practitioner network.	- Public resistance to new large projects. - Administrative burden may delay projects. - Ailing utility balance sheets. - New resiliency and cybersecurity concerns add requirements before implementation.	- US Inflation Reduction Act 2022: set up of a Transmission Facility Financing covering the costs of loans for network extension or upgrade. - Australia: building of 1 000 MW new network to connect the country's largest wind farm to the national electricity market.
People-centred transitions	Just transition mechanisms, worker training programmes, research programmes on market and social transitions.	USD 20 billion	- Regulatory request to operators to build and upgrade infrastructure (resilience, RE integration, digitalisation). - New outcome-based regulations and rate of returns.	- Know-how essential to tailor and direct support. - Co-ordination with subnational authorities. - Lack of appropriate training offer. - Attracting new enterprises to regions in decline.	- US Inflation Reduction Act: specific grant schemes for energy efficiency contractor trainings, and grant/loan instruments for the deployment of low-carbon technology in low-income and disadvantaged communities.
Energy Access	Access to clean cooking, electricity access by grid extension, minigrids, or stand-alone power systems. Basic, efficient appliances.	USD 13 billion	- Funding for training programmes. - Targeted support (subsidies/tax breaks/direct infrastructure spending) for vulnerable SMEs, local communities depending brown sectors or low-income households.	- Financial difficulties of utilities and energy companies (notably SOEs). - Emerging markets and developing economies' (EMDE) restricted fiscal leeway. - Lack of programmes to support access in remote areas.	- Brazil, Guatemala, Honduras, India, Kenya, Morocco, Saint Lucia and Peru: temporarily increase in consumer LPG subsidies enabling clean cooking through dedicated vouchers or cylinder distribution. - Indonesia: extension of electricity access scheme targeting off-grid households, through converter kit distribution, subsidies for new electric installations and financing solar and micro-hydro power plants.

The global energy crisis prompted a USD 630 billion wave of short-term consumer energy affordability measures

The global energy crisis has made emergency consumer energy affordability a central focus for governments. Consumer affordability measures started increasing as of September 2021, but picked up with Russia's invasion of Ukraine. Governments worldwide have now enacted almost USD 630 billion in energy affordability measures directed at domestic households and businesses, in the form of tax reductions, fuel subsidies, energy price regulation cost compensation or liquidity support (energy company bailouts, loans and credit guarantees, bill forbearance). The most common policy instruments include temporary consumer subsidies or tax alleviation/exemption, state-backed loans or price regulation mechanisms, often enacted as temporary measures.

Government consumer- energy affordability measures, by region



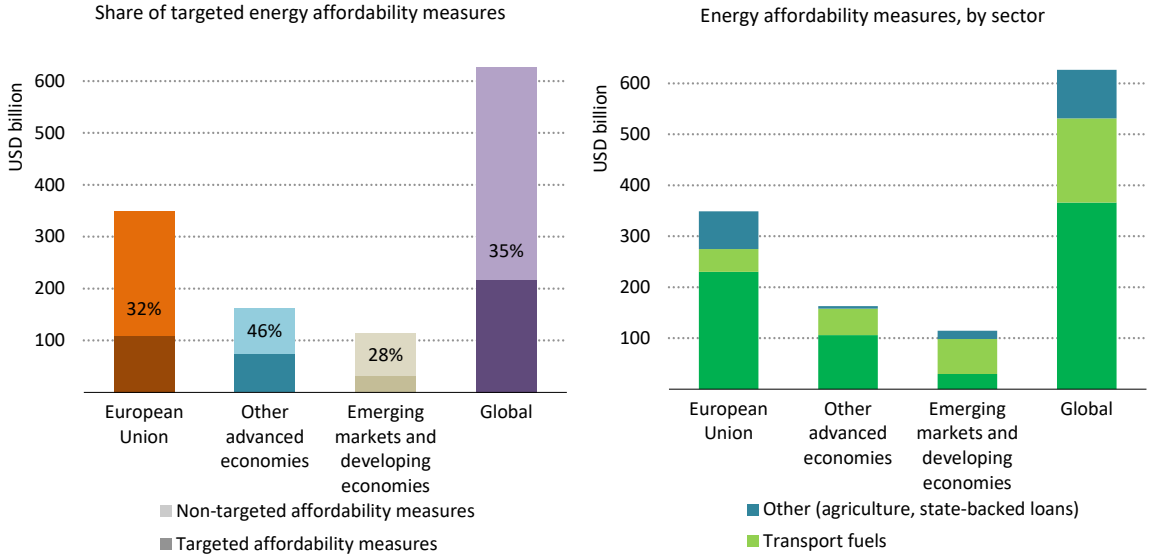
Notes: The spending is assessed from the government's perspective, as direct budget allocation, foregone tax revenues, etc. Quantitative estimates from energy crisis response policies are based on policies officially enacted by governments from September 2021, and do not capture other forms of sub-market price subsidies that may be channelled through utilities and other energy-related state-owned enterprises without financial compensation by the government. Government measures and corresponding budgets officially enacted after 14 November 2022 are not included in this Government Energy Spending Tracker update- such as provisions of the Autumn Statement, Energy Prices Act 2022 and Energy Bill Relief Scheme which were recently adopted by the Parliament of the United Kingdom. Similarly, energy-related provisions of the EUR 200 billion German Energy Relief Plan will be incorporated when fully detailed.

The IEA *Government Energy Spending Tracker* strictly monitors policies and related expenditures officially enacted by governments, linked to the energy sector or to consumer energy expenditures. Announced 2023 packages pending parliamentary or executive discussions in Finland, France, Germany, Ireland, Portugal, the United Kingdom, Japan, and Korea, inter alia, could cause our appraisal to grow considerably.

Advanced economies represent over 80% of the USD 630 billion total, with the European Union accounting for over half of this global outlay. Due to their high and early exposure to international energy trade disturbances, European governments were also the first to enact a consumer-oriented price crisis response.

The global energy crisis hit countries in different ways. Around 60% of global government spending dedicated to consumer affordability measures are going to electricity, gas and heating financial support. The European Union allocated twice the amount earmarked by other advanced economies to these types of support. Transport fuel subsidies, generally administered as a direct discount at the pump, were also a major component, especially in emerging markets and developing economies, and represent a quarter of global spending dedicated to consumer affordability measures.

Government energy affordability spending earmarked, by region and sector



Government interventions have helped shield consumers and businesses from price shocks, and energy affordability measures may have contributed to containing overall inflation trends. However, their mounting cost is drawing heavily upon countries' fiscal capacity and their long-term impact is under debate. Domestic price control measures enacted in response to the 1970s price shock, notably in the United States, ultimately proved unsustainable because of their inability to tackle price increases borne from external, international causes. In many advanced economies, the impact of these supports on public deficit remains contested and may contribute to waning investor confidence in some markets.

The financial burden these supports impose on state finances can be reduced by targeting aid to low-income households and to enterprises particularly exposed to high energy costs. However, only about 35% of short-term consumer affordability measures worldwide explicitly target households or sectors most in need, a proportion that is less than a third in the European Union and in emerging markets and developing economies.

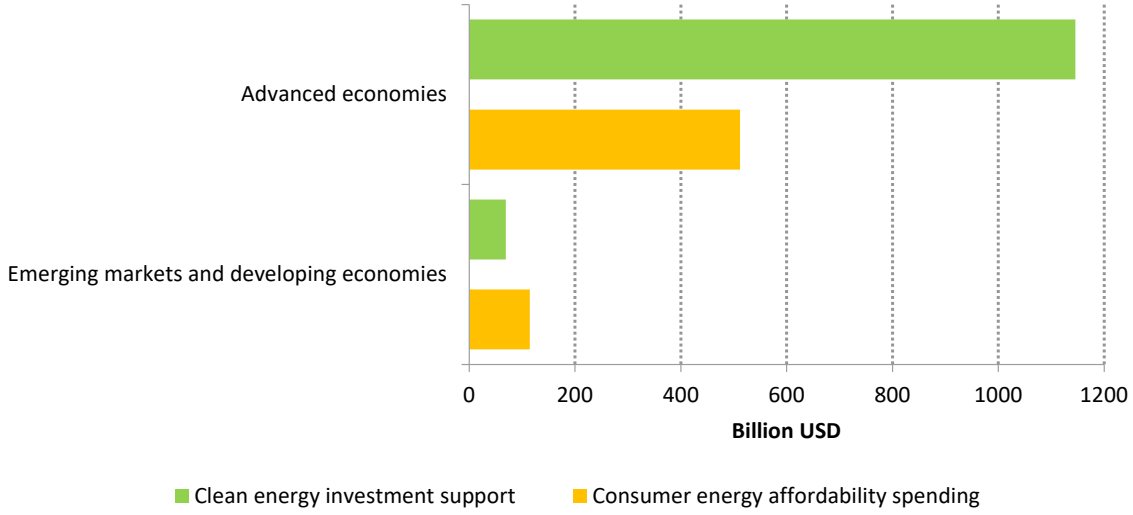
Looking beyond the immediate need to support some consumers, it is critical this support does not replace or diminish decarbonisation policies or clean energy investment. For example, price controls could lengthen the payback period for energy efficiency upgrades, which governments are also incentivising in many countries, causing these two fiscal orientations to run counter to one another. Harmonising these fiscal measures will be increasingly important to materialise needed clean energy investments that could reduce national exposure to fossil fuel market prices and address long-term climate objectives.

Emerging markets and developing economies' fiscal capacity is limiting their energy investment

The latest update of the Tracker confirms a deepening fiscal divide between advanced economies and emerging markets and developing economies. The rise in international prices has caused emerging markets and developing economies to focus on immediate consumer affordability measures. As a result, government spending dedicated to clean energy investment support has stagnated over the last seven months in these geographies, while USD 114 billion were enacted for short-term energy affordability support. This too remains well below the amounts dedicated by advanced economy governments.

This assessment does not include the cost of capping prices borne by energy companies without government budgetary support. While effectively cushioning consumers from energy bill increases, these "silent" supports are likely to contribute to mounting debt levels, particularly among public and private utilities, but also transport retailers and vendors of liquefied petroleum gas for cooking. Many emerging markets and developing economies are also facing steeper price spikes for other commodities tied to international markets, like food and fertilisers. In addition, supply chain constraints and inflation have driven up the price for off-grid access component, especially solar PV modules, batteries and electronic components. As a result, new projects providing electricity access in the developing world is set to slow in the coming years.

Government clean energy investment support and consumer energy affordability spending earmarked, by region



Multi-lateral support remains critically important to lifting energy investment in emerging markets and developing economies. The Sharm-el-Sheikh Implementation Plan calls for multilateral development banks and international financial institutions to increase funding flows to emerging markets and developing economies for climate action, simplify financing procedures, and increase the flexibility of different policy and financial instruments. Recent initiatives such as the International Monetary Fund (IMF) and World Bank Resilience and Sustainability Facility (RSF) enable IMF members to channel Special Drawing Rights to support long-term energy project financing in emerging markets and developing economies. Other multi-lateral banks should consider similar revisions to their mandate and procedures to help emerging markets and developing economies overcome increasing headwinds for clean energy investment, and to put them on track for meeting global energy transition objectives.

Methodology

Analytical approach of the *Government Energy Spending Tracker*

Government clean energy investment support

Government clean energy investment support policies are defined as measures meant to drive spending on clean energy investment support included in government economic recovery plans in response to the Covid-19 pandemic or the subsequent global energy crisis.

Common clean energy investment support policies include consumer or producer subsidies to develop electric vehicle markets, direct spending or public-Private Partnership for building low-carbon and efficient transport infrastructures, grants for emerging energy technology pilot programmes, or tax incentives for energy-efficient building renovations.

Quantitative estimates in the *Government Energy Spending Tracker* are based on national-level clean energy sector policies enacted by governments from the second quarter of 2020 until end October 2022 as part of Covid-19 related recovery measures, and directed toward long-term projects and measures to boost economic growth.

The *Government Energy Spending Tracker* organises clean energy investment support on a sectoral and regional basis, into six key sectors: low-carbon electricity, electricity networks, low carbon and efficient transport, energy-efficient buildings and industry, cleaner fuels and emerging low-carbon technologies.

Short-term consumer affordability measures

Short-term consumer affordability measures were enacted by governments in response to the international price rise that materialised in the fourth quarter of 2021 and was further aggravated by Russia's invasion of Ukraine. The most common policy instruments include temporary consumer subsidies or tax alleviation/exemption, state-backed loans or price regulation mechanism, often enacted as temporary measures.

The spending is assessed from the government's perspective, as direct budget allocation, foregone tax revenues, etc.

Quantitative estimates from energy crisis response policies are based on policies enacted by governments from the September 2021 to end October 2022, and are derived exclusively from official government estimates of the total direct cost of supporting those measures borne by governments. Accordingly, it does not capture other forms of implicit price subsidies that may be channelled through public utilities and other energy-related state-owned enterprises.

Collection process

The IEA independently collects recovery policies, in cooperation with its members, as well as G20 members. The full list of policies considered in the *Government Energy Spending Tracker*, including budget information, is available on the IEA Policies and Measures (PAMS) Database, a unique repository that has aggregated energy policies over the last 20 years, bringing together data from the IEA Energy Efficiency Database, the Addressing Climate Change database, and the Building Energy Efficiency Policies (BEEP) database, the IEA/IRENA Renewable Energy Policies and Measures Database, along with information on CCUS and methane abatement policies. These policy records include concise summaries of the policy, links to the original source, and relevant tagging for policy type, technologies and sectors.

Explore policies

Browse the 1600+ national government policies, spanning over 67 countries, underlying the IEA *Government Energy Spending Tracker*.

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