

Latin America Energy Outlook

A satellite-style image of the Earth showing Latin America and the Caribbean. The landmasses are colored in shades of green and yellow, indicating vegetation and terrain. The surrounding oceans are a deep blue, and white clouds are scattered across the scene. The title 'Latin America Energy Outlook' is overlaid in large white text at the top.

Overview: Argentina

International
Energy Agency

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World Energy Outlook Special Report

INTERNATIONAL ENERGY AGENCY

The IEA examines the full spectrum of energy issues including oil, gas and coal supply and demand, renewable energy technologies, electricity markets, energy efficiency, access to energy, demand side management and much more. Through its work, the IEA advocates policies that will enhance the reliability, affordability and sustainability of energy in its 31 member countries, 13 association countries and beyond.

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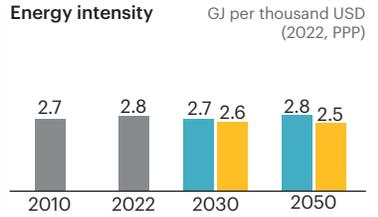
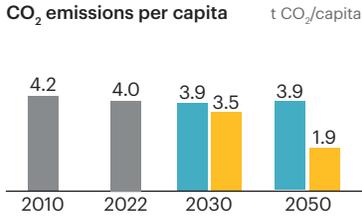
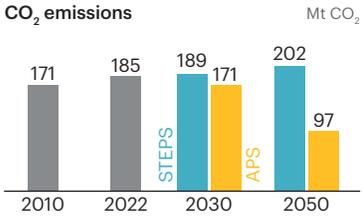
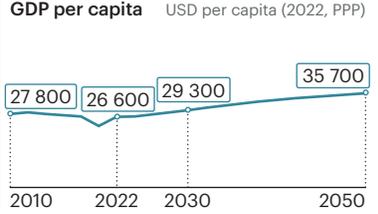
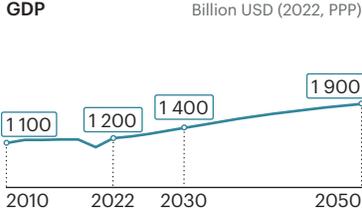
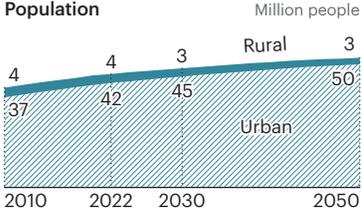
natural gas producer in Latin America and the Caribbean

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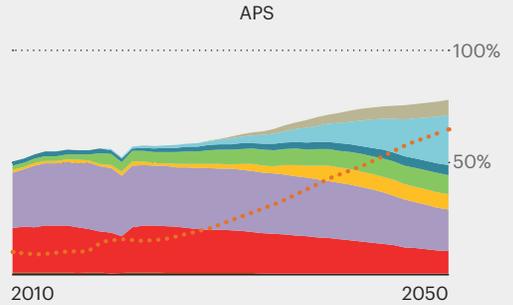
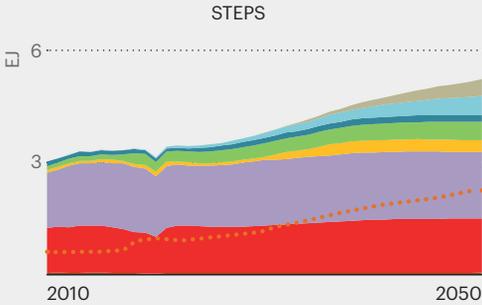
largest lithium producer in Latin America and the Caribbean

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largest CNG vehicle fleet in the world

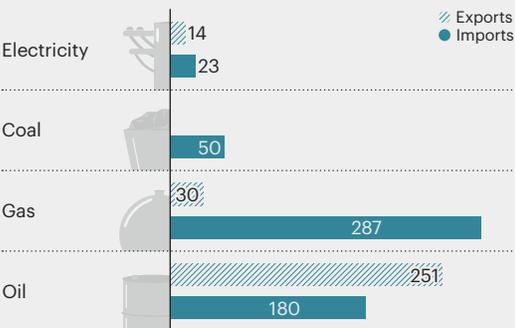


Primary energy supply and share of low-emissions sources



● Coal
 ● Oil
 ● Natural gas
 ● Nuclear
 ● Bioenergy
 ● Hydro
 ● Wind and solar
 ● Other
 ● Share of low-emissions (right axis)

Trade of main energy products (2021)



Trade of non-energy products (2021)

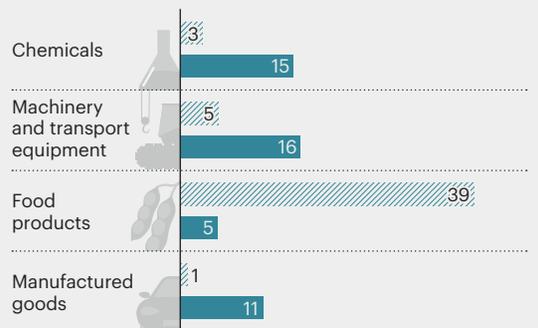


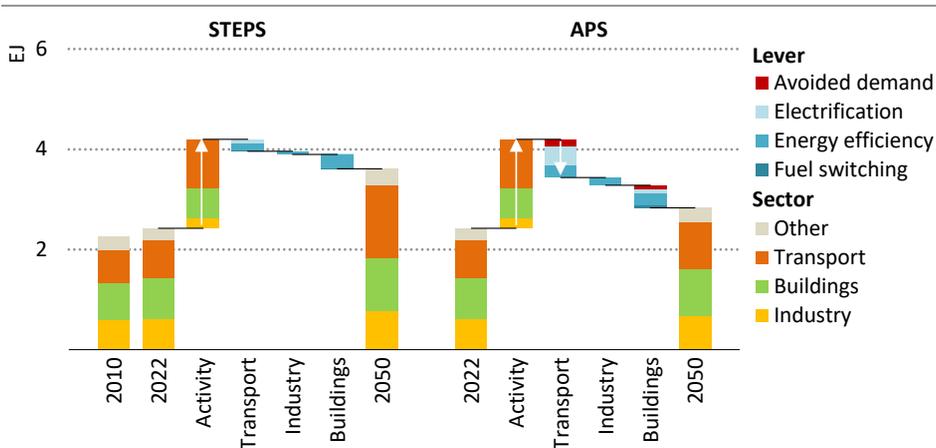
Table 1 ▶ **Recent policy developments in Argentina**

	Policy	Publication year
Economy-wide measures	● NDC: maximum absolute target of 349 Mt CO ₂ -eq in 2030.	2021
	● Long-term strategy: GHG neutrality by 2050.	2022
	● National Energy Transition Plan to 2030 includes 8% reduction of energy demand, at least 50% of renewable electricity generation.	2023
	● Decree N° 332/2022: Energy Subsidy Segmentation Plan.	2022
Just transition policies	● Green Employment Programme.	2023
	● Resolution No 255/2021: Federal Network of Argentinian Mining Women.	2021
AFOLU	● Pilot programme of payments based on REDD+ results (reduction of deforestation emissions and degradation of forests) - target 2027.	2020
	● Law 27.487 to promote investment in forest plantations.	2019
Producer economies	● Decree N° 892/2020: "Plan Gas.Ar" - subsidies to the hydrocarbon industry.	2020
Hydrogen	● 2023-2050 National Strategy for the Development of the Hydrogen Economy.	2023
Power	● Law 27.424 incentivises the integration of distributed generation to the public electricity network (net metering scheme) - 1 GW distributed solar PV by 2030.	2017
Industry	● National plan for industrial development: Recommendations to leverage financial support and tax credits of more than USD 3 billion.	2022
Transport	● National Plan for Sustainable Transportation: Reduce GHG emissions to minimum 5.84 Mt CO ₂ -eq below a business-as-usual scenario by 2030 - target 15% of vehicles to run on natural gas.	2022
Buildings	● National Housing Labelling Programme (PRONEV) to unify energy efficiency labelling system.	2023

Table 2 ▶ **Major infrastructure projects in Argentina**

	Project	Size	Date online	Status	Description
Hydrogen/ammonia	Pampas	35 kt H ₂ /year (production)	2024	●	Dedicated renewables
	Rio Negro (phase 1)	104 kt H ₂ /year (capacity)	2024	●	Dedicated renewables
Nuclear	CAREM project	32 MW	2027	●	Small modular reactor
Hydro	Néstor Kirchner and Jorge Cepernic hydroelectric plant	1 310 MW	2025	●	Southernmost hydroelectric dams
Oil and gas	Néstor Kirchner natural gas pipeline phase 2	20 bcm/d	2024	●	470 km natural gas pipeline
Transmission, interconnections	AMBA I	500/220/132 kV	-	●	Substations and high voltage lines (+ 500 km)
Status ● Feasibility study ● Under construction					

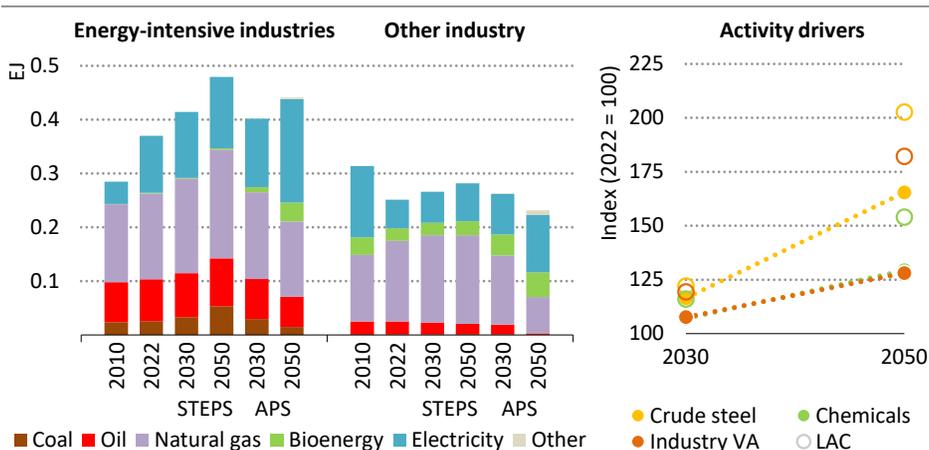
Figure 1 ▶ Final energy consumption by scenario in Argentina



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- Today, transport and buildings account for two-thirds of total final energy consumption. In both scenarios, transport energy consumption rises the most through to 2050.
- In the STEPS, total final consumption increases 50% by 2050. In the APS, final energy consumption rises by only 17% thanks to electrification and energy efficiency gains.

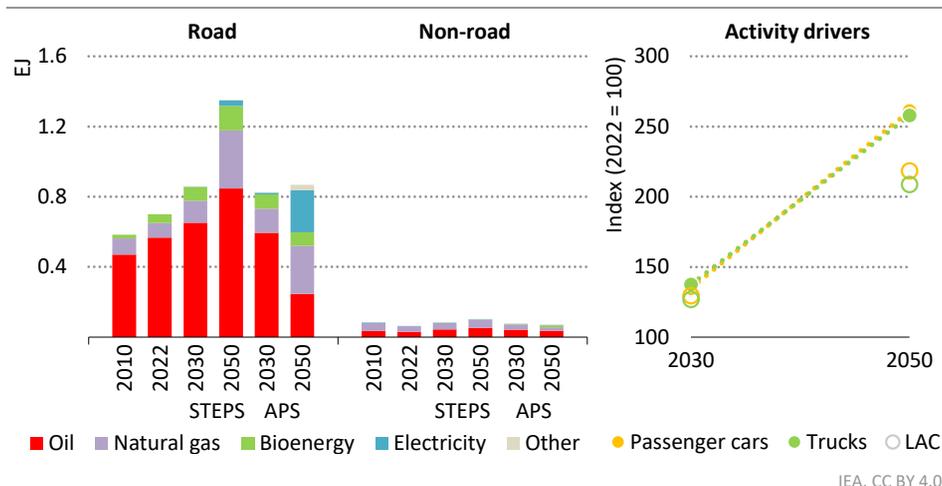
Figure 2 ▶ Fuel consumption in industry by type and scenario in Argentina



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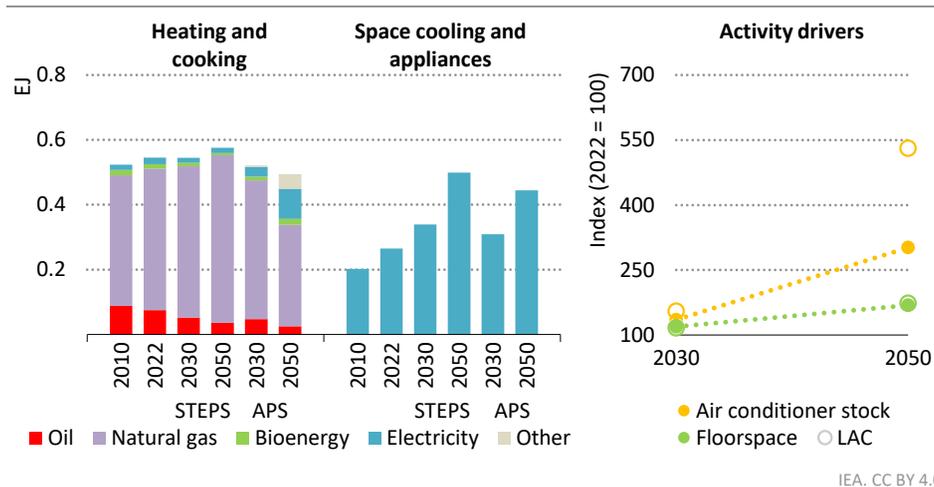
- Today, around 45% of energy used in energy-intensive industries is natural gas: energy-intensive industries account for 60% of total energy demand in industry in Argentina.
- Industrial activity in Argentina sees less growth than the average in the region. Most of this modest increase is met by natural gas and electricity in the STEPS. In the APS, most of the increase is met by electricity while gas and oil consumption decline.

Figure 3 ▶ Fuel consumption in transport by type and scenario in Argentina



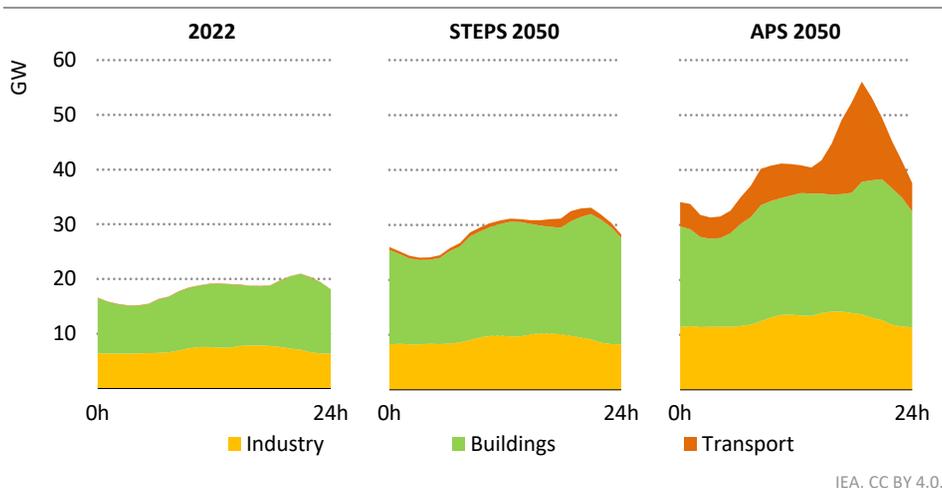
- Oil accounts for nearly 80% of transport energy consumption today. Natural gas sees its current share rise in both scenarios; EV sales rise rapidly, especially in the APS.
- Road freight and passenger car activity both increase by 160% between 2022 and 2050.

Figure 4 ▶ Fuel consumption in buildings by type and scenario in Argentina



- Natural gas currently meets 80% of heating and cooking needs. Energy efficiency gains temper increases in demand for heating in both scenarios.
- Demand for space cooling rises by over 25% by 2030 in the STEPS and more than 15% in the APS. Appliances account for most growth in electricity consumption in buildings in both scenarios.

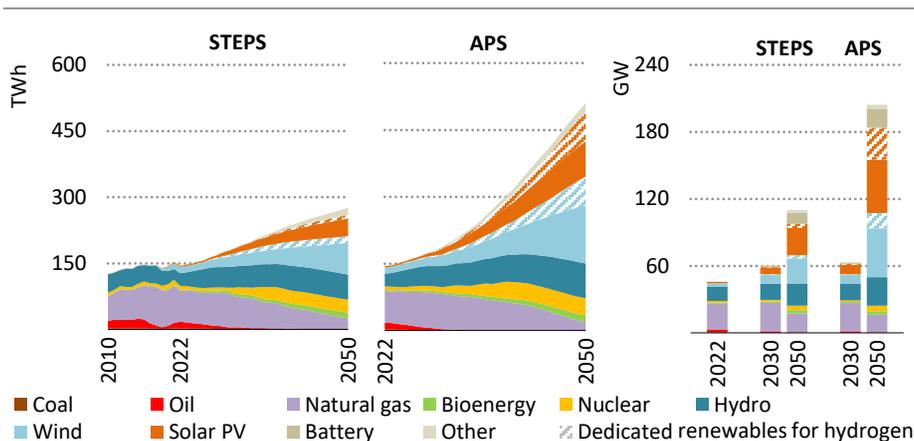
Figure 5 ▶ Average electricity daily load profile by scenario in Argentina



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- Between 2022 and 2050, peak electricity demand increases by 70% in the STEPS and more than doubles in the APS: mainly driven by cooling needs and rising fleet of EVs.
- In the APS, smart charging of EVs could play a central role in peak demand management.

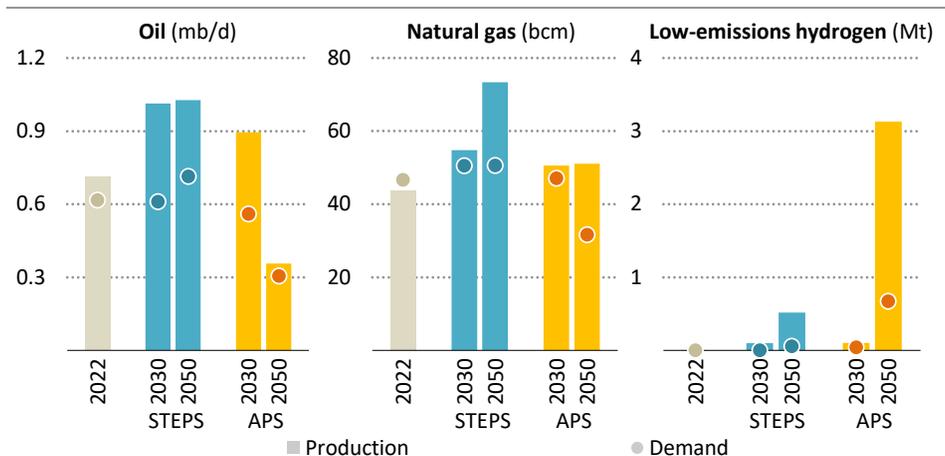
Figure 6 ▶ Electricity generation and capacity by fuel and scenario in Argentina



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- Natural gas supplies 50% of electricity today, but wind and solar PV meet most of the demand growth in both scenarios, driven by the significant wind potential in Patagonia.
- In the APS, solar PV and wind produce 67% of electricity generation by 2050, up from 12% today. Nuclear generation also increases. Gas-fired generation falls steadily.

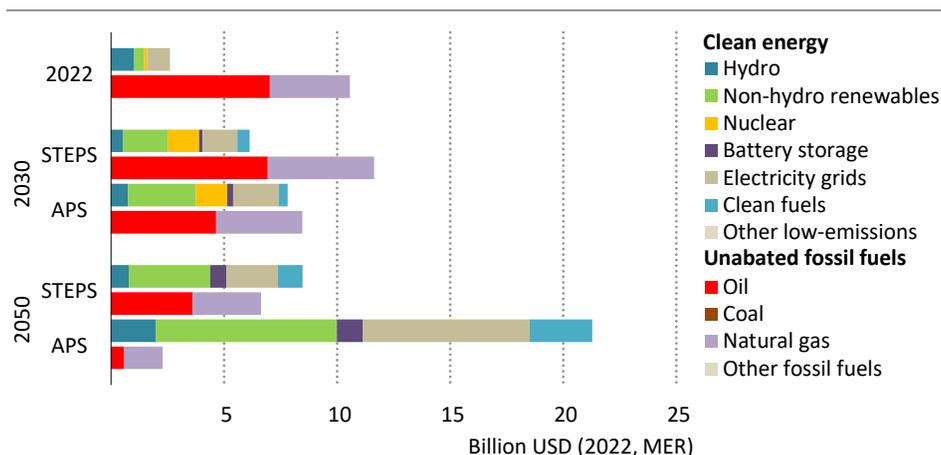
Figure 7 ▶ Fuel demand and production by scenario in Argentina



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- In the STEPS, oil production increases by 40% to 2030 and then plateaus. Argentina becomes a natural gas exporter as gas production increases by 25% to 2030.
- In the APS, abundant renewable energy potential (wind in the south and solar in the north) enables low-emissions hydrogen production to reach over 3 Mt in 2050.

Figure 8 ▶ Annual investment in energy supply by type and scenario in Argentina



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- In the STEPS, investment in clean energy supply increases from 0.4% of GDP today to 0.9% by 2050. In the APS, it reaches eight-times the current level.
- In the APS, most remaining fossil fuel investment is for natural gas by 2050.

Notes

Units

Area	ha	hectares
Distance	km	kilometre
Emissions	Gt CO ₂	gigatonnes of carbon dioxide
	Mt CO ₂	million tonnes of carbon dioxide
	Mt CO ₂ -eq	million tonnes of carbon-dioxide equivalent (using 100-year global warming potentials for different greenhouse gases)
	t CO ₂ -eq	tonnes of carbon-dioxide equivalent
Energy	EJ	exajoule (1 joule x 10 ¹⁸)
	PJ	petajoule (1 joule x 10 ¹⁵)
	TWh	terawatt-hour
	Tcal	teracalorie (1 calorie x 10 ¹²)
Gas	bcm	billion cubic metres
	bcm/d	billion cubic metres per day
	mcm/d	million cubic metres per day
Mass	kg	kilogramme
	kt	kilotonnes (1 tonne = 1 000 kg)
Monetary	USD million	1 US dollar x 10 ⁶
	USD billion	1 US dollar x 10 ⁹
Oil	mb/d	million barrels per day
	b/d	barrels per day
Power	GW	gigawatt
	MW	megawatt
	kV	kilovolt

Terms

Activity drivers for industry include production levels (Mt) and value added (USD 2022, PPP); for transport, vehicle-kilometres (km) for passenger cars and tonne-km for trucks; for buildings, air conditioning (million units) and floorspace (million square metres). The activity numbers presented correspond to the Stated Policies Scenario (STEPS) indexed on the 2022 value.

Bioenergy refers to bioenergy and waste.

Clean fuels refers to biofuels, hydrogen and hydrogen-related fuels.

Daily average electricity load profiles do not factor in electricity demand generated by dedicated renewable sources connected to electrolysers, and they also do not consider the influence of demand-response mechanisms.

Energy-intensive industries include chemicals, iron and steel, non-metallic minerals (cement and other), non-ferrous metals (aluminium and other) and pulp, paper and printing.

Heating and cooking in buildings refers to energy demand for space and water heating, and cooking.

Hydrogen demand excludes both hydrogen exports and the hydrogen used for producing hydrogen-based fuels which are exported.

Investment data are presented in real terms in year-2022 US dollars.

Large-scale CCUS projects refer only to facilities with a planned capture capacity higher than 100 000 tonnes of CO₂ per year.

Low-emissions hydrogen projects considered are those with an announced capacity for 2030.

Non-road transport includes rail, domestic navigation, domestic aviation, pipeline and other non-specified transport.

Other for power generation and capacity refers to geothermal, concentrated solar power, marine, non-renewable waste and other non-specified sources.

Other for final consumption in sectors refers to non-renewable waste, hydrogen, solar thermal and geothermal.

Other in a sector category refers to agriculture and other non-energy uses.

Other fossil fuels in energy supply investment refer to non-renewable waste and other supply sources.

Other fuel shifts include bioenergy, nuclear, solar thermal, geothermal and natural gas.

Other industry refers to the construction, food and tobacco, machinery, mining and quarrying, textile and leather, transport equipment, wood industry branches and remaining industry.

Other low-emissions in energy supply investment include heat pumps, CCUS, electricity generation from hydrogen, electricity generation from ammonia and direct air capture.

Road transport includes six vehicle categories (passenger cars, buses, two/three-wheelers, light-duty vans and trucks, and medium and heavy trucks).

SDG 7 refers to Sustainable Development Goal (SDG) 7: “ensure access to affordable, reliable, sustainable and modern energy for all”, adopted by the United Nations in 2015.

Solar potential data is calculated based on the average potential at national level assessed in kilowatt-hour per kilowatt peak per day (2020).

Total final consumption includes consumption by the various end-use sectors (industry, transport, buildings, agriculture, and other non- energy use). It excludes international marine and aviation bunkers, except at world level where it is included in the transport sector.

Acronyms

Scenarios: **STEPS** = Stated Policies Scenario; **APS** = Announced Pledges Scenario.

AFOLU	agriculture, forestry and other land use
BECCS	bioenergy with carbon capture and storage
CCUS	carbon capture, utilisation and storage
CNG	compressed natural gas
EV	electric vehicle
GDP	gross domestic product
GHG	greenhouse gases
H₂	hydrogen
HVDC	high voltage direct current
ICE	internal combustion engine
MEPS	minimum energy performance standards
MER	market exchange rate
NDC	Nationally Determined Contribution
PPP	purchasing power parity
PV	photovoltaics
SDG	Sustainable Development Goals
VA	value added
ZEV	zero emissions vehicle

The policy tables include existing policies and announcements as of the end of September 2023. The same applies to the tables of existing and announced projects.

The IEA does not use colours to refer to the various hydrogen production routes. However, when referring to specific policy announcements, programmes, regulations and projects where an authority uses colour to define a hydrogen production route, e.g. green hydrogen, we use that terminology to report developments in this review.

International Energy Agency (IEA)

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