GLOBAL RENEWABLES CONGRESS

World Future Council

Policy Guidance for Global South Countries

E3 ANALYTICS

IET International Energy Transition

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Introduction

GOAL OF THE STUDY

The aim of this policy document is to highlight existing good policies to scale-up renewable energy finance and harness the socio-economic benefits of renewable energy deployment.

In particular, the focus is on providing guidance for legislators and parliamentarians in countries of the Global South to learn from positive policy experiences in other countries and to adapt these lessons to their local contexts.

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OVERVIEW

Five Case Studies from the Global South

South Africa

SOUTH AFRICA

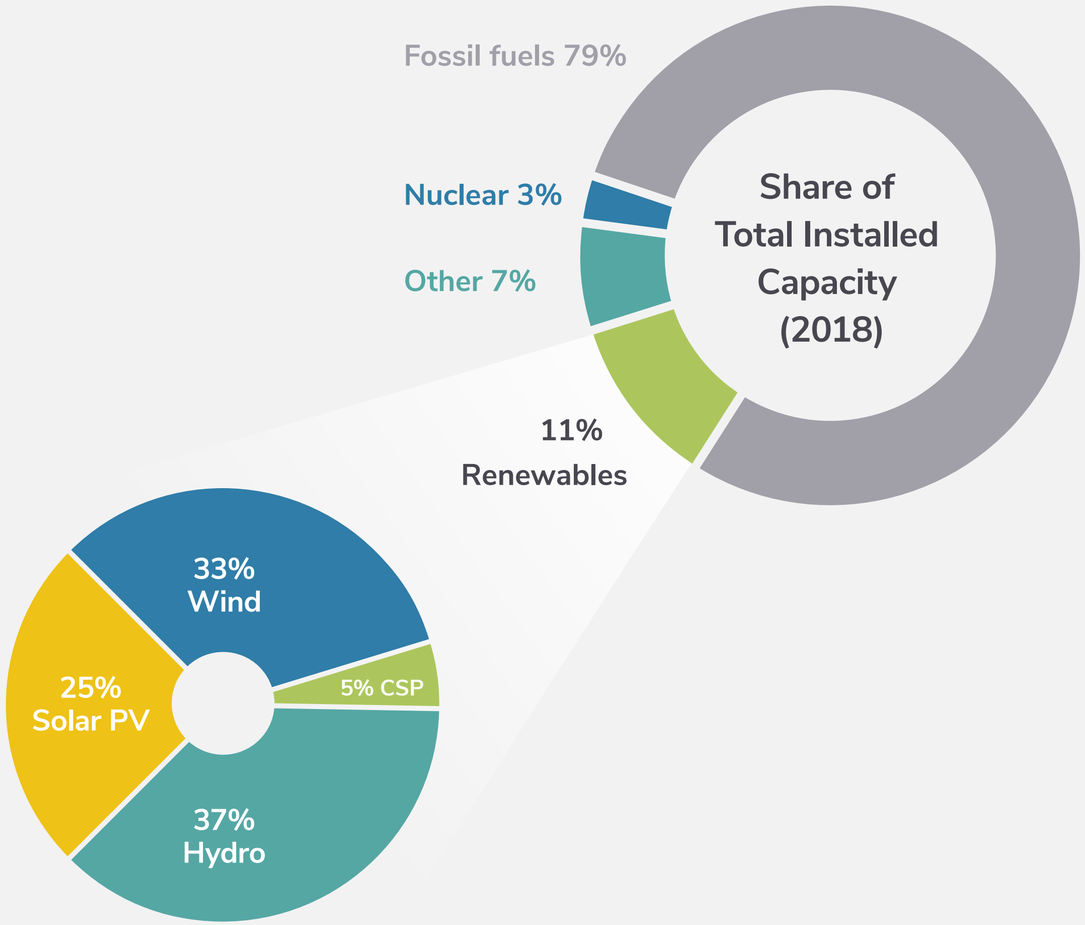
Key Framework Conditions

South Africa has abundant renewable energy potential, including both excellent solar and wind resources.

Nonetheless, the national electricity system remains heavily reliant on coal-fired generation, which represents 79% of electricity demand.

However, these coal-fired power plants are mostly old and unreliable, leading to frequent power outages, and causing significant economic losses both for citizens and companies.

Since renewables are now the cheapest technologies for electricity generation, South Africa has committed to transitioning its electricity mix to a higher share of renewables.



Breakdown of RE Source by Share of RE Capacity (%)

Source: Owusu Mante 2020

SOUTH AFRICA

Procurement and price reduction

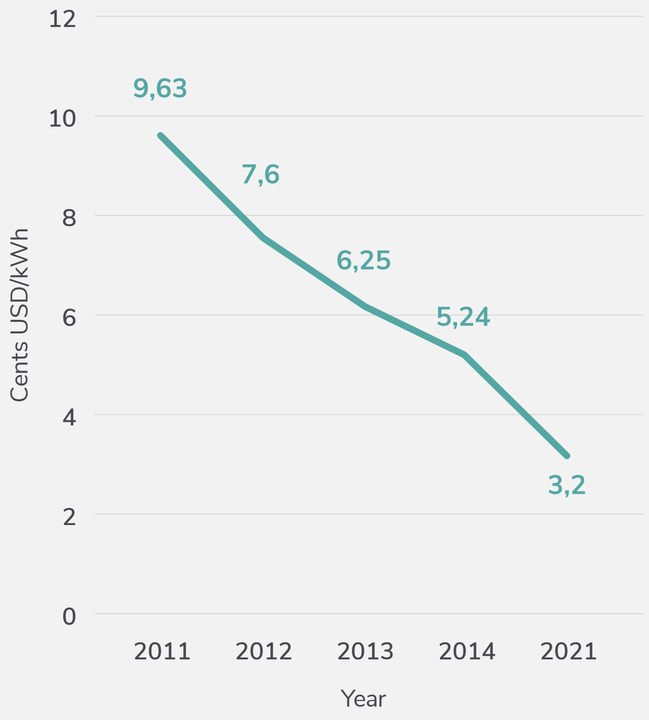
Since 2011, South Africa has successfuly attracted over EUR 10 Billion of private sector investment in its renewable energy sector and developed over 8.700 MW of renewable energy capacity.

Two policies have been critical to South Africa's success:

- The establishment of a bankable power purchase agreement
- South Africa's Integrated Resource Plan (IRP), which requires its main utility (Eskom) to prioritize least-cost electricity supply options. The IRP includes a range of voices, including from civil society and from research institutes

Price Levels in RE Auctions in South Africa: Bid Windows 1–5 (in cents USD)

Source: IPPO



Key actions for legislators:

First, **push for the adoption of an Integrated Resource Plan** that focuses on ensuring least-cost electricity supply.

Second, ensure **civil society and independent research institutes** have a seat at the table, and are included as contributors or intervenors.

Third, ensure that the **PPAs are bankable**, and in line with international best practices.

SOUTH AFRICA

Establishing a JET-P

At COP26 in Glasgow, a “Just Energy Transition Partnership” (JET-P) was launched to support South Africa’s long-term decarbonisation efforts.

As part of this partnership, five donor countries have promised to mobilize an initial commitment of $8.5 billion for the first phase of financing, with additional phases of finance likely to follow.

The priorities of the first phase of JET-P in South Africa are accelerating the phase-out of coal and increasing the adoption of electric vehicles.

Just Energy Transition Partnerships (JET-P) are emerging as a major new approach to support countries in their efforts to accelerate the transformation of the energy sector.

Such partnerships could become a powerful tool to accelerate the energy transition in global south countries.

SOUTH AFRICA

Key Steps toward Establishing a JET-P

Initiate **dialogue with key country partners** to indicate a clear commitment toward the establishment of a JET-P

Conduct **sector-specific analysis** of the key focus areas to accelerate the energy transition in your country (power sector, transport sector, heating, cooling, industry)

Outline **practical, sector-specific measures** that require substantial international investment to be realized

Develop a **credible, action-oriented investment plan** that articulates a country's vision of a just energy transition, based on the sector-specific measures outlined

Establish the **oversight, monitoring, and verification mechanisms**, including the underlying institutional framework, to monitor progress and ensure goal achievement

Viet Nam

VIET NAM

With an ambitious climate policy, Viet Nam remains ahead of its peers in the ASEAN region

The Prime Minister of Viet Nam made a major announcement at COP26, committing to **phase out coal by the 2040s**, and to achieve **net zero emissions by 2050**, one of the most ambitious pledges made by an emerging economy.

This announcement has redefined the debate on the energy transition in Viet Nam, triggering a cascade of activity as the various agencies and institutions try to re-position to achieve these targets.

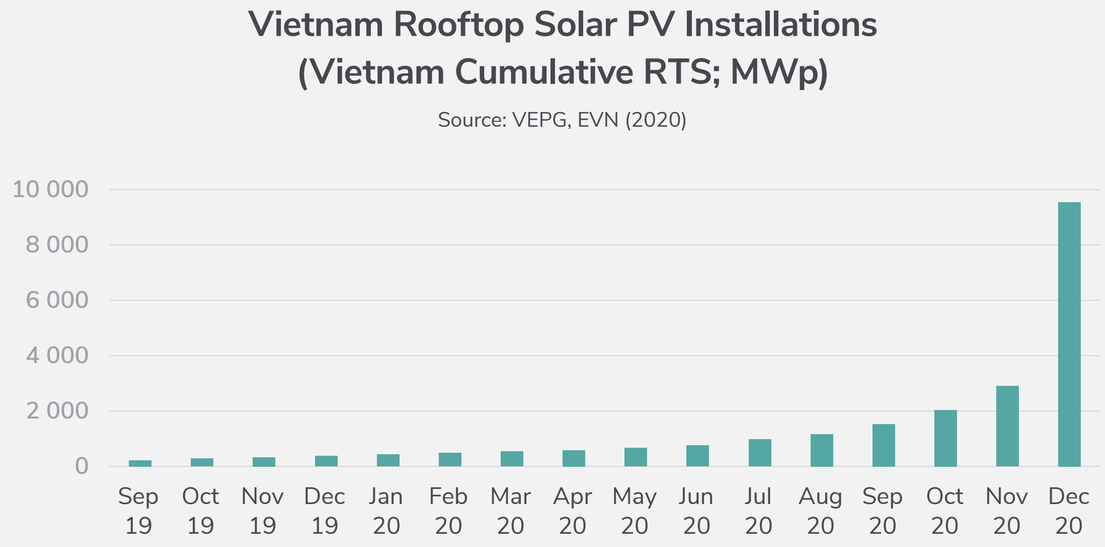
VIET NAM

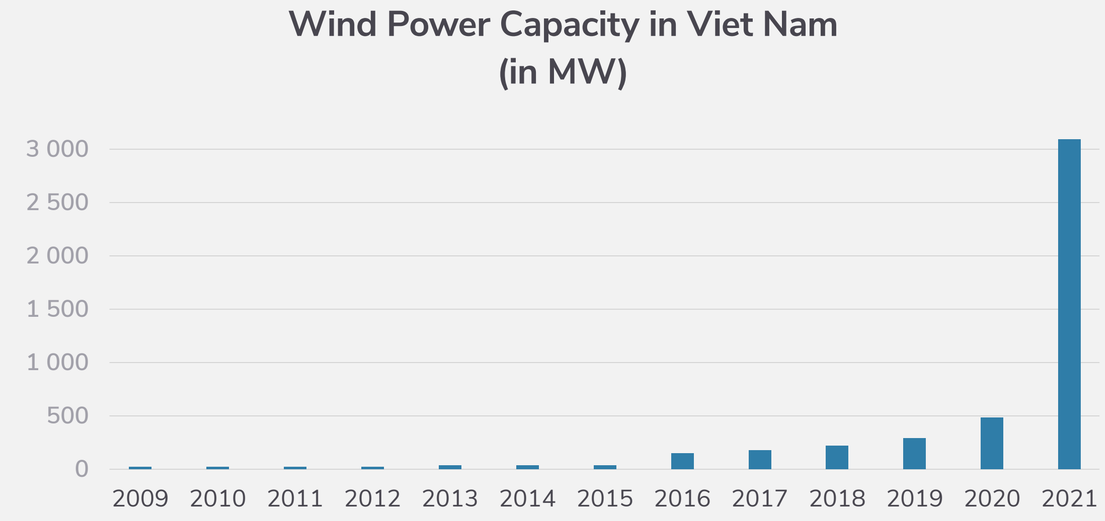
Viet Nam has experienced a boom in solar and wind investment

At the heart of Viet Nam's success at rapidly scaling up solar PV is the country's **Feed-in Tariff (FIT)** policy that provided guaranteed long-term contracts for renewable energy producers.

Viet Nam's installed **solar PV** capacity grew from roughly 400MW in early 2019 to over 18.500MW today, an over 40-fold increase. Over half of this capacity is rooftop solar located on homes and businesses.

A boom has also occurred in **wind power**: Viet Nam has increased its wind power capacity from roughly 400MW in 2018 to over 3.000MW today.





VIET NAM

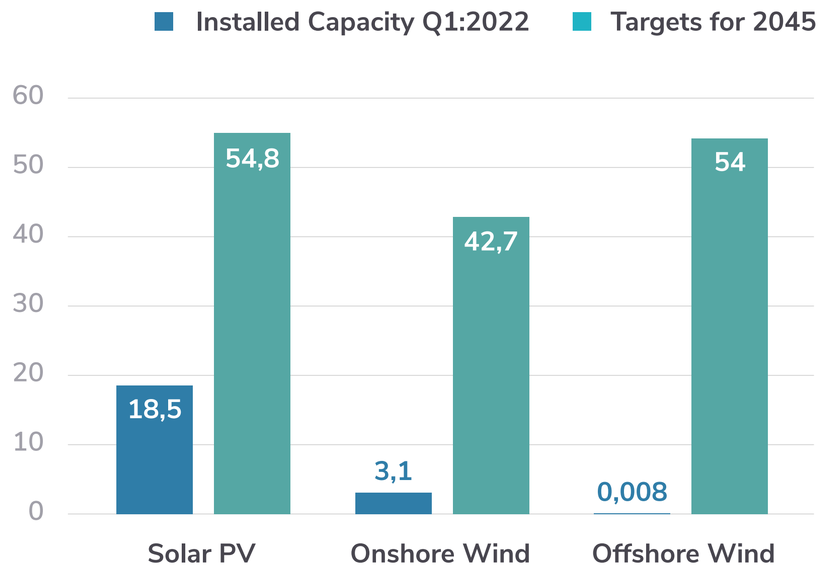
Viet Nam is now setting its course for a low-carbon future

The latest Power Development Plan (PDP-8, May 2022), reaffirms Viet Nam's commitments to a low-carbon future.

Viet Nam is aiming to achieve 50.7% wind and solar by 2030 in its electricity mix; coal power is to be cut to less than 10% of the mix by 2045 (down from over 50% today).

However, the transmission grid is emerging as a major bottleneck: Grids take **7-15 years** to build, while RE projects take **6 to 36 months** to build.

Total Installed Capacity Q1:2022 vs Targets for 2045 (in GW)



Key actions for legislators:

Push for the **adoption of a Feed-in Tariff**, as FITs can be a powerful tool to scale up investment and achieve RE deployment objectives quickly. If auctions are preferred, ensure they include frequent windows to allow a stable, growing renewable energy industry to emerge. Start-and-stop cycles of development undermine progress toward a low-carbon future.

Second, ensure that **transmission infrastructure** is being built out in a timely manner. Lack of transmission infrastructure can undermine the achievement of RE targets.

India

INDIA

The share of renewable energy in India's electricity mix is growing rapidly

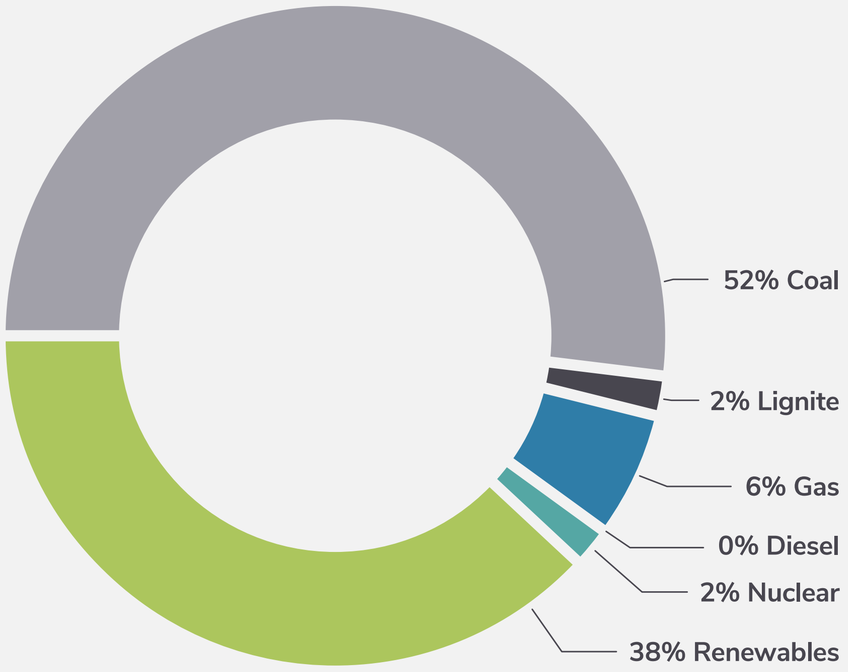
The share of renewable energy in India's mix has grown from 14% in 2011 to over 38% today, creating over 200.000 jobs in the solar and wind sector alone.

At the national level, India has adopted an ambitious target to achieve 175GW of non-fossil fuel capacity by the end of 2022 and 500GW by 2030; over 80% of this is expected to come from solar PV and wind power (400-450GW).

Despite several challenges, India has already made rapid progress toward its objective, with a total of 151 GW installed as of end of March 2022.

At COP 26, India pledged to achieve **Net Zero by 2070**.

Total Installed Capacity (in %)
(out of 400GW in total)



INDIA

India is setting the wheels of transport sector electrification in motion

As part of its energy transition, India is making significant progress in electrifying its transport sector, particularly in promoting more sustainable forms of micro-mobility such as two-and-three wheelers.

It has a diverse set of policies to encourage the electrification of transport at both the state and national levels, channelled through its National Electric Mobility Mission Plan (NEMMP).

Over 400,000 electric two-and-three wheelers were sold in India in Fiscal Year 2022, up from just over 100,000 two years ago.

In the three-wheeler market, **electric models represented over 45% of total sales in Fiscal Year 2022**.

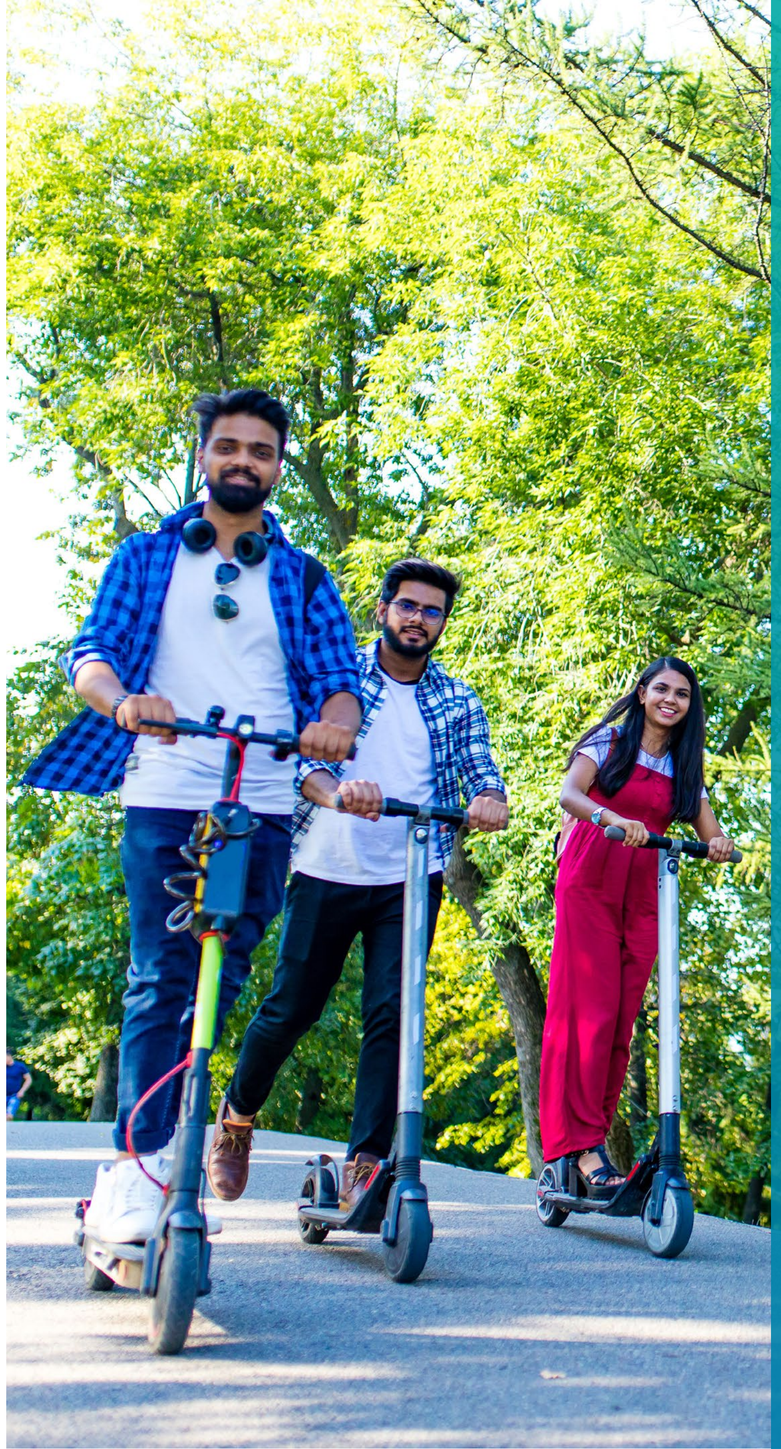
INDIA

Lessons Learned from India

Long-term national targets combined with strong state-level policies can contribute to rapid RE market development and job creation.

To accelerate the transition of the transport sector, a broad approach including specific incentives, regulatory policies, and public investments is needed.

Micro-mobility including two- and three-wheelers have a vital role to play in accelerating the transformation of the transportation sector and reducing both carbon emissions and air pollution.



Key actions for legislators:

First, adopt **binding RE targets** for the electricity sector.

Second, **develop targeted policies and incentives** to support the flourishing of electrically-powered micro-mobility including cycling, scooters, as well as two- and three—wheelers.

These options are not only more affordable, they are also better at reducing emissions, mitigating traffic, and they can be adopted and deployed more quickly.

China

CHINA

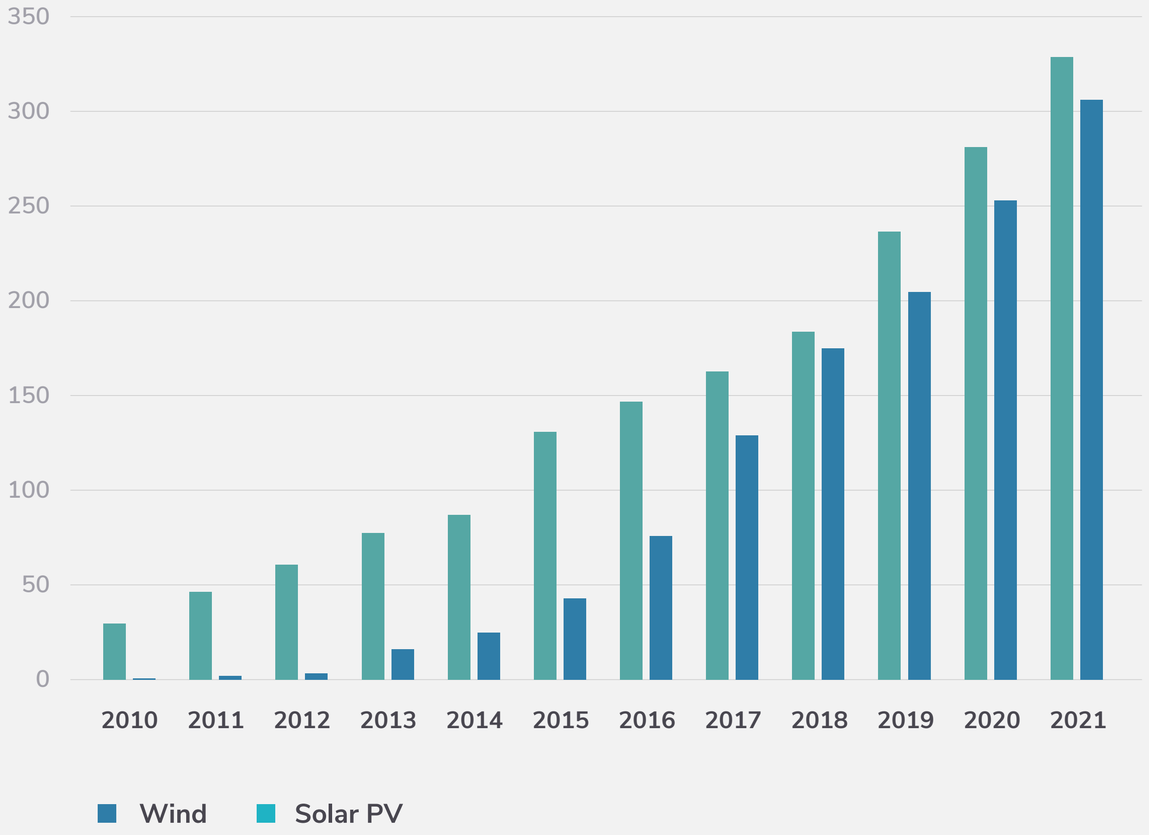
China has become a world leader in renewable energy capacity additions

In 2021 alone, China added over 53GW of solar PV, more than Germany's entire cumulative solar PV capacity.

China now has over 320 GW of wind power connected to the grid, and over 300GW of solar power, making it by far the largest market for both technologies worldwide.

However, China's progress is marred by its substantial investments in new coal-fired generation: in 2021, China added 25.2GW of coal capacity, 56% of the global total added in that year.

Solar and Wind Power Development in China (2010–2021), in GW



CHINA

China is adopting policies targeting virtually all dimensions of the energy transition

China has over 80 policies in the renewable energy sector targeted different aspects and technologies including capacity building, urban planning, innovation, and green transport.

This comprehensive policy package has helped turn China into a renewable energy powerhouse, creating 4.7 million jobs and making China the leader among emerging countries for patents in the clean energy sector.

Like in India, a central part of China's energy transition is to accelerate the transition of its transport sector, mainly by encouraging the shift to **electric vehicles**.

CHINA

Policies to accelerate transport sector transformation in China

China's efforts to transform its transportation sector to electric vehicles is being driven by a broad combination of policies:

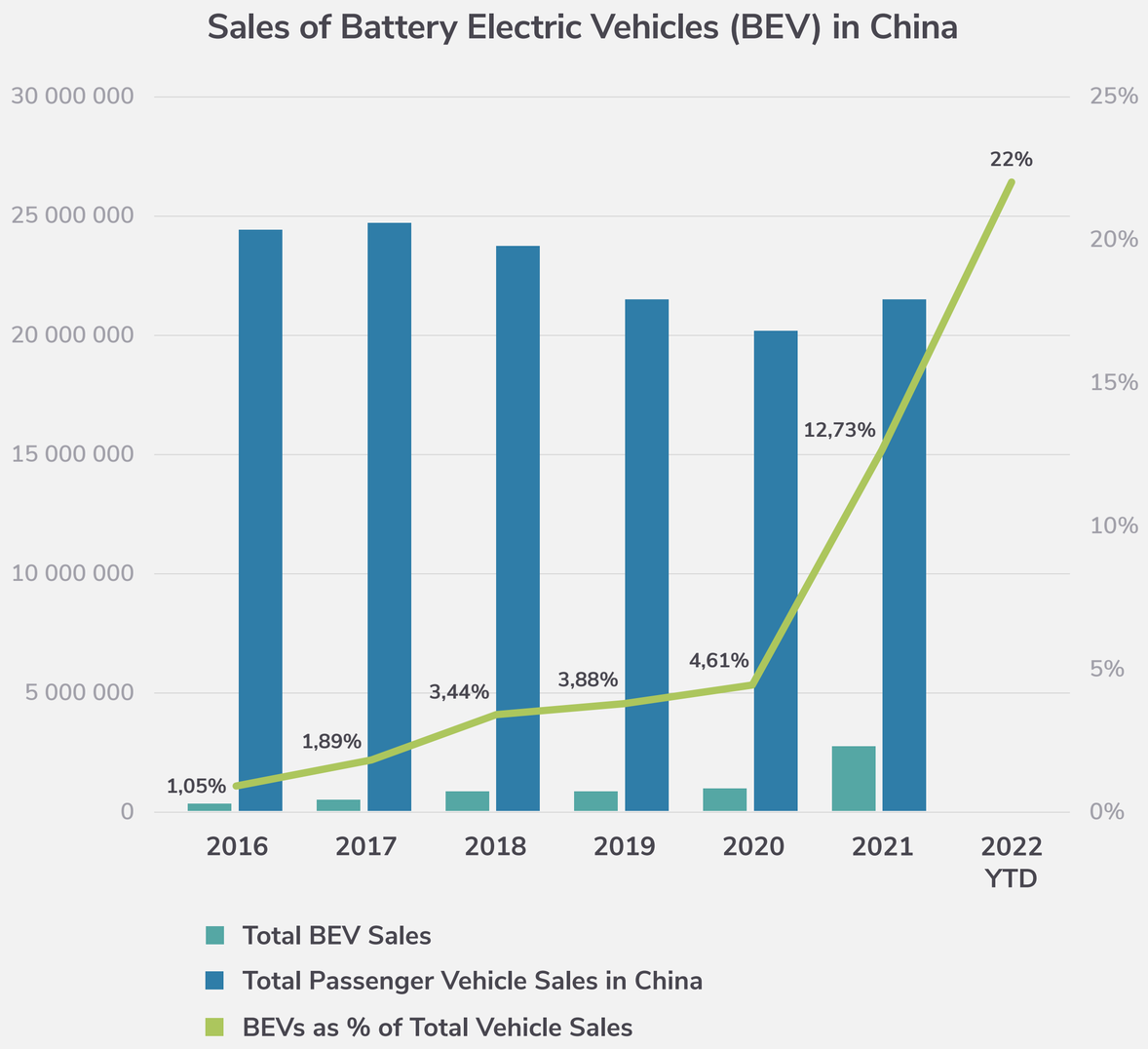
- Tax rebates
- Restrictions on fossil-fuel vehicle registrations
- Reduced registration fees for EVs
- Bonuses and rebates for EV purchases
- Substantial government investments in electric vehicle charging infrastructure, particularly in urban centres

CHINA

China is using both long-term targets & targeted incentives to drive electric vehicle adoption

In April 2020, China announced an investment of around 1.4 billion EUR to build 200,000 public charging points, 400,000 private chargers, and 48,000 public charging stations.

In addition, in November 2020, China adopted a target of achieving 20% of new vehicle sales from clean and electric models by 2025: this target was already surpassed in April 2022!



CHINA

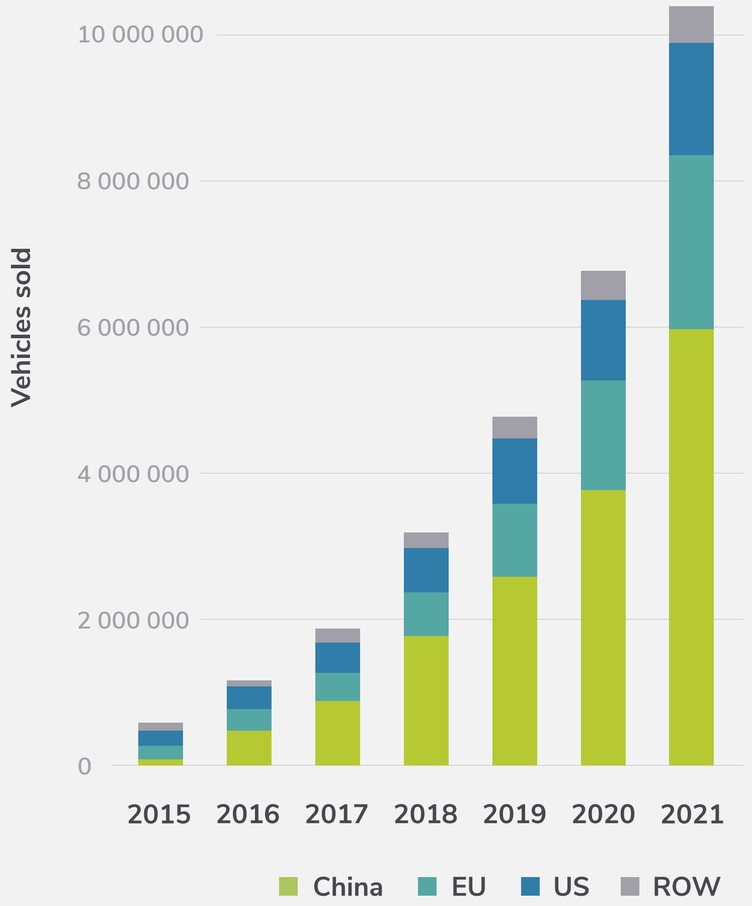
China is now the largest EV market worldwide

As of early 2022, China has over 6 million electric vehicles on the road, with fully electric vehicles reaching a market share of new vehicle sales of over 22% in April 2022.

China alone now represents over 55% of global sales of pure battery electric vehicles (BEVs).

China has also deployed the largest number of electric buses, with over 400,000 in operation nation-wide.

Cummulative Pure Battery Electric Vehicles (BEVs) Sales by Region (2015–2021)



Key take-away for legislators:

Targets supported by clear incentives and government investments in charging infrastructure can drive rapid growth in the adoption of zero emissions vehicles. Push for ambitious electric vehicle targets and design a suite of supportive policies and incentives to accelerate the pace of adoption.

The Philippines

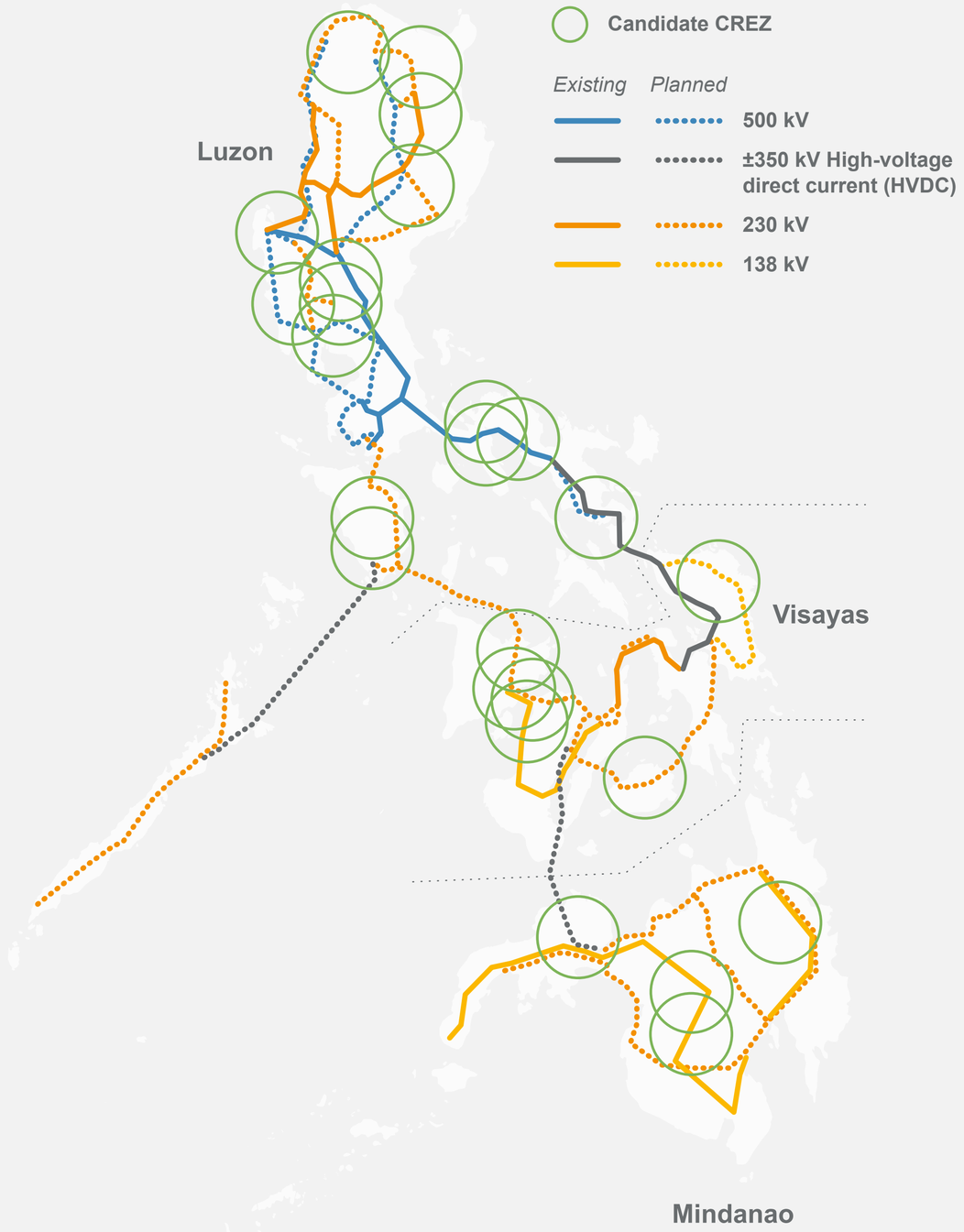
PHILIPPINES

The Philippines has adopted dedicated Renewable Energy Zones to facilitate development

Under the Philippines' planning approach, it has established a number of Competitive Renewable Energy Development Zones (CREZ).

CREZ are geographic areas that have been identified across the country with three key features:

- **High-quality renewable energy resources,**
- **Strong developer interest, and**
- **Proximity to grid infrastructure**



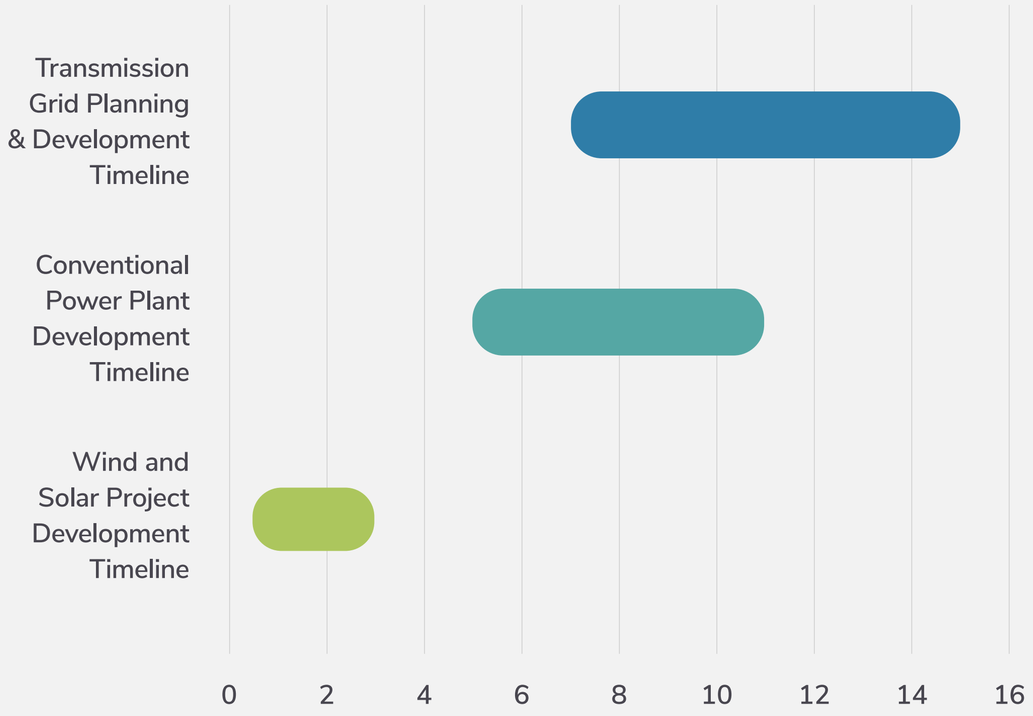
PHILIPPINES

Building transmission grids takes longer than building RE projects

Due to the mismatch between building transmission grids (7-15 years) and building RE projects (roughly 6 to 36 months), it can occur that RE projects are ready to enter commercial operation well before the required transmission infrastructure is completed.

This creates significant costs for developers, for transmission operators, for utilities, and for society.

Transmission Development Timelines Are Not Aligned with RE Project Development Timelines



PHILIPPINES

The Competitive Renewable Energy Developments Zones help reduce costs and risks

The CREZ process embodies a proactive (rather than reactive) approach to transmission planning.

The aim is to enable a more harmonious development of both generation and transmission system infrastructure.

If transmission development can be better aligned with RE project development, a just energy transition can be achieved more quickly and effectively.

PHILIPPINES

Establishing clear RE development zones can reduce both cost and risks

By designating clear zones for renewable energy development, and by reducing risks around transmission access, CREZ can help reduce the costs of renewable energy development for all stakeholders.

CREZ provide greater legal and planning certainty for developers, and can also be used to undertake citizen and community engagement around particular projects.

Such transmission planning can also help mitigate congestion on the grid as both RE and electricity demand increase.

Key take-away for legislators:

Ensure that **adequate transmission infrastructure** is in place (or being built) for renewable energy projects.

Establish **working groups and stakeholder consultations** to start setting up renewable energy development zones.

Citations

SOUTH AFRICA

Seth Owusu-Mante (May 13 2020). South Africa's 2019 IRP Renewable Energy Targets, Climate Policy Lab, https://www.climatepolicylab.org/communityvoices/2020/5/13/south-africas-2019-irp-renewable-energy-targets

IPPO (2020). Independent Power Producers Procurement Programme (IPPPP) - An Overview, As at 31 March 2020. Available from https://www.ipp-projects.co.za/Publications.

Owusu-Mante (2020) https://www.climatepolicylab.org/communityvoices/2020/5/13/south-africas-2019-irp-renewable-energy-targets

Reuters (2022), South Africa needs $250 bln over three decades for clean energy transition – report. https://www.reuters.com/business/sustainable-business/safrica-needs-250-bln-over-three-decades-clean-energy-transition-report-2022-05-26/

UKCOP 26 (June 21 2022). Six-month update on progress advancing the just energy transition partnership (JET-P), UN Climate Change Conference 2021, https://ukcop26.org/six-month-update-on-progress-in-advancing-the-just-energy-transition-partnership-jetp/

VIET NAM

Energy Tracker (May 18 2022): https://energytracker.asia/the-latest-pdp8-vietnam-draft-focus-on-renewable-energy-and-a-drastic-co2-emissions-reduction/

Vietnam Briefing (April 29 2022): https://www.vietnam-briefing.com/news/vietnams-power-development-plan-draft-incorporates-renewables-reduces-coal.html/

David Hutt (June 29 2022). Vietnam's climate credentials come under scrutiny after activist jailing, DW Asia, https://www.dw.com/en/vietnams-climate-credentials-come-under-scrutiny-after-activist-jailing/a-62305268

GIZ Energy Programme Vietnam (2022). Renewable Energy and Energy Efficiency, https://www.giz.de/en/worldwide/68953.html

Monika Merdekawati, Ngoc Giang Vu, Septia Buntara Supendi (June 23 2022). Paving the way for wind energy prosperity in Vietnam, ASEAN Center for Energy, https://aseanenergy.org/paving-the-way-for-wind-energy-prosperity-in-vietnam/

INDIA

Economic Times (Nov. 9 2021). https://economictimes.indiatimes.com/industry/renewables/india-to-achieve-50-clean-energy-share-500-gw-re-capacity-targets-before-2030-deadline-singh/articleshow/87604552.cms?from=mdr

Invest India (2022). Creating a sustainable world, https://www.investindia.gov.in/sector/renewable-energy

Government of India (2022): Power sector at a glance, Ministry of Power, https://powermin.gov.in/en/content/power-sector-glance-all-india

Harsh Shukla (February 2 2022). Solar's share in India's installed power capacity increases to 12.4% as of Q4 2021, Mercom, https://mercomindia.com/solar-share-india-power-mix-q4-2021/

Economic Times (February 2 2022). A comprehensive roundup on Indian EV policies, https://auto.economictimes.indiatimes.com/news/policy/faqs-a-comprehensive-roundup-on-indian-ev-policies/89290126?redirect=1

REN21 (2011). Renewables 2011: Global Status Report, https://www.ren21.net/wp-content/uploads/2019/05/GSR2011_Full-Report_English.pdf

Economic Times (April 9 2022). The hustle is on, https://auto.economictimes.indiatimes.com/news/industry/the-hustle-is-on-evs-corner-31-of-3ws-over-2-5-of-all-automobile-sales-in-india-in-fy22/90731051?redirect=1

Bloomberg (2022). Round-the-Clock Renewable Energy Auctions: India, https://www.bloomberg.com/netzeropathfinders/best-practices/round-the-clock-renewable-energy-auctions-in-india/

IRENA (2021). Global RE Jobs report: https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2021/Oct/IRENA_RE_Jobs_2021.pdf

Shikha Rokadiya (October 29 2021). Electrifying India's two-wheelers: Supply-side incentives and beyond, International Council on Clean Transportation, https://theicct.org/electrifying-indias-two-wheelers-supply-side-incentives-and-beyond/

AMRIT (2022). Electric Vehicle Incentives, https://e-amrit.niti.gov.in/electric-vehicle-incentives

Arijit Sen et al. (April 28 2021). Understanding the emissions impacts of large-scale vehicle electrification in India, International Council on Clean Transportation, https://theicct.org/publication/understanding-the-emissions-impacts-of-large-scale-vehicle-electrification-in-india/

Anurag Kotoky (June 13 2022). Electrifying fleets on solution to world's car obesity project, Bloomberg, https://www.bloomberg.com/news/newsletters/2022-06-13/electrifying-fleets-one-solution-to-world-s-car-obesity-problem-l4cnlqfe

Economic Times (September 30 2021). Widespread EV adoption in India will yield net air quality, health benefits by 2040, ET Auto, https://auto.economictimes.indiatimes.com/news/industry/widespread-ev-adoption-in-india-will-yield-net-air-quality-health-benefits-by-2040-study/86645526?redirect=1

CHINA

José Pontes (April 24 2022). China Electric Car Market: 26% Market Share in March, CleanTechnica, https://cleantechnica.com/2022/04/24/china-electric-car-market-reaches-26-plugin-market-share-in-march/

Hongyang Cui, Dale Hall, Jin Li, Nic Lutsey (2021). Update on the global transition to electric vehicles through 2020. International Council on Clean Transportation, https://theicct.org/wp-content/uploads/2021/12/global-update-evs-transition-oct21.pdf

GIZ (2020). New Energy Buses in China: Overview on Policies and Impacts, https://www.changing-transport.org/wp-content/uploads/2020_GIZ_New-Energy-Buses-in-China.pdf

Sean Fleming (May 31 2021). What patents tell us: which countries, what sectors are the clean energy innovators, Energy Post, https://energypost.eu/what-patents-tell-us-which-countries-what-sectors-are-the-clean-energy-innovators/

Canalys (2022). China electric vehicle sales 2021, https://www.canalys.com/newsroom/china-electric-vehicles-2021

IEA (May 31 2022). Electric car registrations and sales share in China, United States, Europe and other regions, 2016 – 2021, International Energy Agency, https://www.iea.org/data-and-statistics/charts/electric-car-registrations-and-sales-share-in-china-united-states-europe-and-other-regions-2016-2021

Global Energy Monitor (2022). Boom and Bust Coal 2022. https://globalenergymonitor.org/wp-content/uploads/2022/04/BoomAndBustCoalPlants_2022_English.pdf

THE PHILIPPINES

Mhycke Gallego (July 13 2022). Toward the renewable energy transition, The Manila Times, https://www.manilatimes.net/2022/07/13/business/top-business/toward-the-renewable-energy-transition/1850706

USAID (2020). Ready for Renewables: Grip planning and competitive renewable energy zones (CREZ) in the Philippines, National Renewable Energy Laboratory, https://www.nrel.gov/docs/fy20osti/76235.pdf

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