

Existing Building Action to Reduce Carbon Footprint

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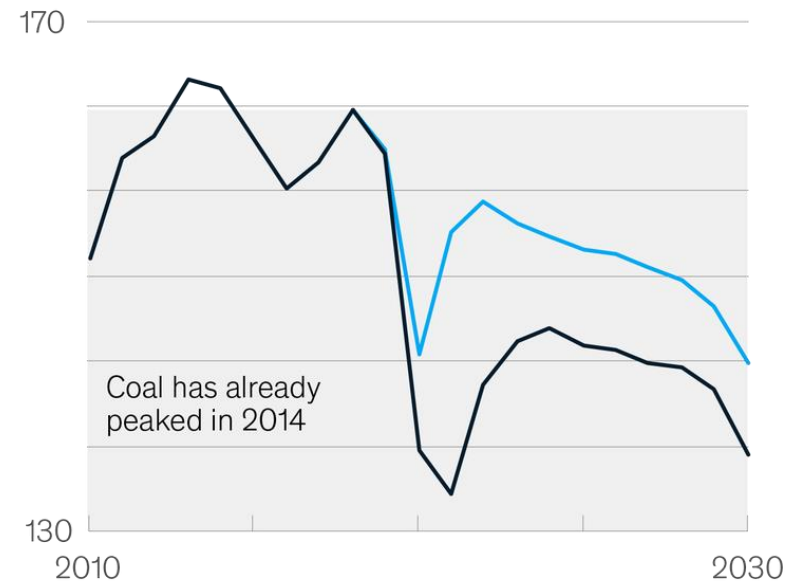
Agenda

1. Global trends
2. Indonesia's energy transition
3. Australia: a case study
4. Future actions for building owners

Global trends: Coal

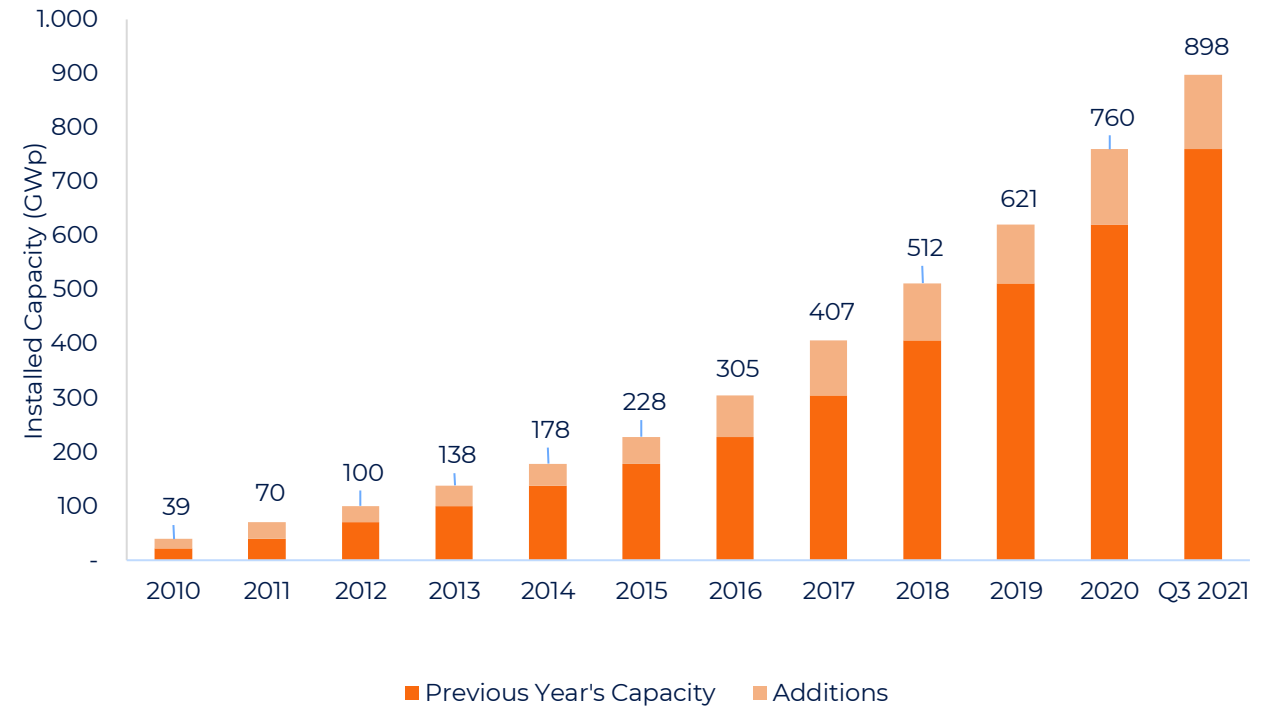
- Coal supplied 36.7% of global electricity generation in 2019
- Global coal demand peaked in 2014
- Coal demand declines by almost 40% from 2019 to 2050
- Coal's role in the power sector will reduce

Coal demand, million TJ



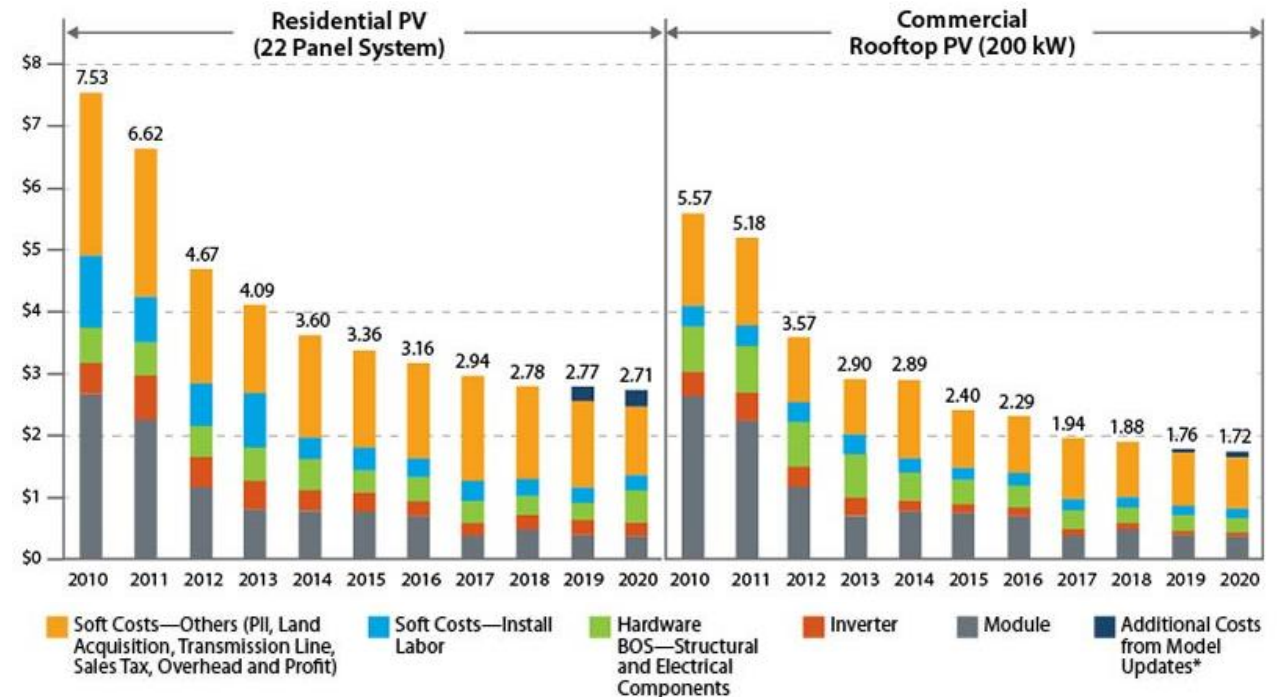
Global trends: Renewables

- The world is currently at ~4.5% solar penetration
- By the end of 2020, at least 42 countries had a cumulative capacity of 1GWp or more



Global trends: Renewables

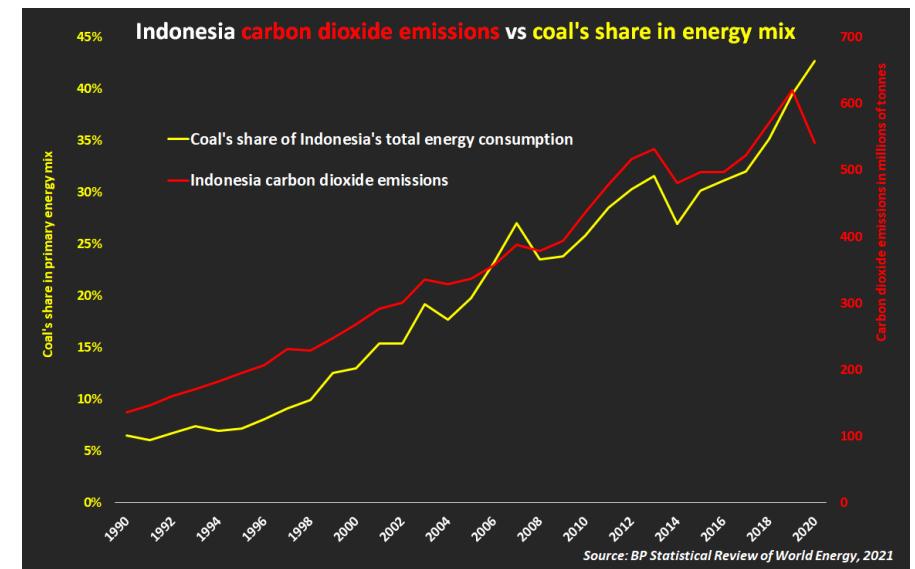
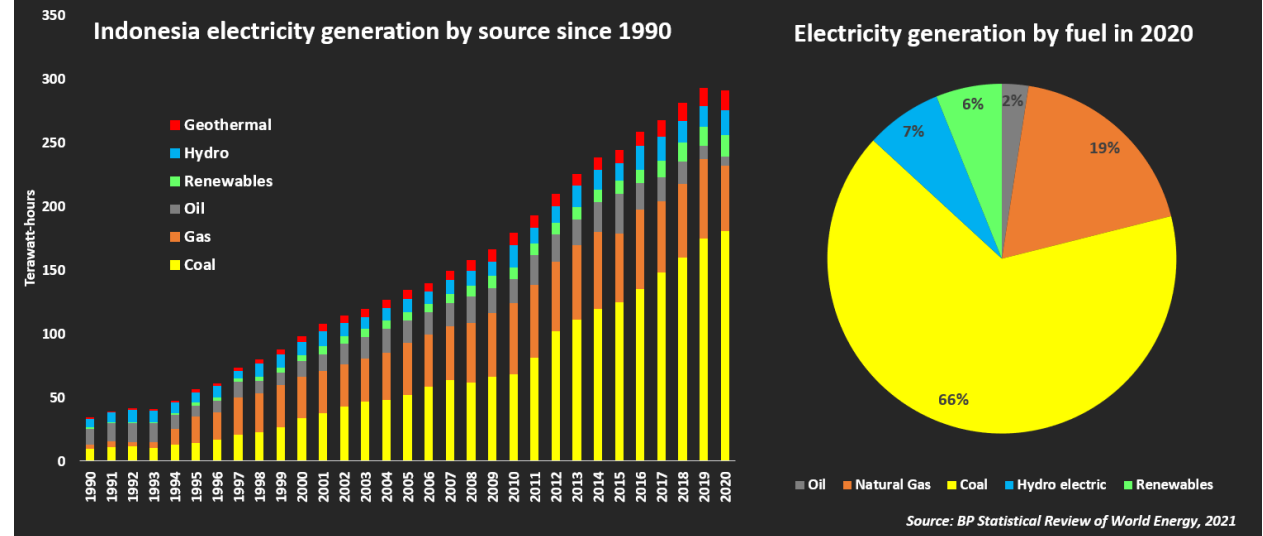
- The lower cost of components and improvements in efficiency have reduced the cost of solar
- The LCOE declines have diminished recently
- The story is clear: Coal is finished and renewables are the future



Source: NREL

Indonesia's energy transition

Indonesia electricity generation by fuel source



Indonesia's energy transition

172
MWp

Installed Solar PV Capacity as of Q3 2021

Only 172MWp of solar has been installed in Indonesia. This is far below Australia (25GWp), Vietnam (16.5GWp), and even Singapore (377MWp)

194 – 655
GWp

Total Addressable Market in Indonesia

According to a study by IESR, Indonesia has a technical potential of 194 – 655GWp of rooftop solar PV capacity

4.7
GWp

Target installed capacity in 2030

Based on the target set in the RUPTL, solar PV capacity is expected to reach 4.7GWp by 2030

Australia: A case study

- The growth in solar is staggering
- 3 million households have rooftop solar
 - 3GW of new residential solar in 2020
 - 27.3% of homes with solar
- Medium-scale solar sector (systems between 100 kW and 5 MW) added 117 MW of new capacity in 2020
- There is now 521 MW of capacity in the medium-scale sector, with the size of the industry more than doubling over the past two years.
- Solar is now the largest generator in the SWIS

Australia: A case study





- The boom in solar was started by green certificates that subsidised the cost
- Now, the growth in solar is being led by industry
- Rapid growth in medium scale solar has been due to shopping centres and commercial buildings installing solar
- Why?
 - Control rising electricity costs
 - Improve reliability
 - Increase the value of the buildings
 - Attract tenants
 - Access to capital
 - Moral obligation to be sustainable

Australia: Industry leading the solar boom

Mirvac hits carbon positive nine years ahead of schedule



By [Carolyn Cummins](#)
November 17, 2021 – 12:51am

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“Mirvac is getting lower operational costs at its buildings, reduced risk, higher employee engagement and productivity, and has more ability to attract quality partners, tenants and customers.” Mirvac

Sustainability wins for listed property trusts



Nick Lenaghan
Property editor

Oct 15, 2021 – 5:00am

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ASX-listed property players have collected a bevy of gongs in the annual Global Real Estate Sustainability Benchmark rankings, as Australia faces increased scrutiny on its green credentials [ahead of COP-26](#).

Among them, Vicinity Centres has been named regional sector leader for listed retail centres in Oceania and third globally in the GRESB rankings, a well-regarded global green ratings system for the property sector.

The mall owner, which has a target of net zero carbon emissions by 2030 for common areas of its wholly owned retail assets, has improved its energy efficiency by 23 per cent, [cut emissions by 44 per cent](#) and reduced water usage by 33 per cent over the past five years.

“Strong sustainability targets, along with net zero carbon commitments, are critical in continuing to attract both capital partners and quality tenants.” Lendlease Australia

Future actions for building owners



- Reduce waste and improve efficiency
 - LED lighting
 - More efficient cooling and heating
 - Night audits
 - Water use
 - Waste reduction



- Energy transition
 - Monitor your energy consumption patterns
 - Shift away from fossil fuels
 - Grid that relies on coal
 - Diesel backup
 - Solar
 - Battery storage
 - Electric vehicle charging stations



Thank You