Towards a Greener Singapore:
Benchmarking Singapore Based on the Singapore 2030 Green Plan Goals

Context

In 2021, Singapore released the **Singapore Green Plan 2030** as a national roadmap to guide the country's sustainability transition over the next 10 to 30 years. The Green Plan is closely aligned with the United Nations Sustainable Development Goals (SDGs), with targets adapted to reflect Singapore's specific economic structure, urban context, and development priorities. Rather than adopting the SDGs wholesale, the plan contextualises sustainability in a way that is both practical and policy-relevant for Singapore.

The Green Plan is structured around five key pillars:
(1) City in Nature, (2) Sustainable Living, (3) Energy Reset, (4) Green Economy, and (5) Resilient Future, which collectively frame Singapore's environmental, economic, and social sustainability objectives.

Goals

1) **Assess Singapore's progress over time** by analysing trends in selected sustainability indicators aligned with the goals of the Singapore Green Plan 2030.
2) **Benchmark Singapore's performance against peer countries**, including both regional comparators and economies with similar income and development profiles, to contextualise Singapore's relative progress.

Data and Scope

Data were sourced from the World Bank's ESG Data Bank, with indicators selected from the **SDG framework**, given the Green Plan's alignment with SDG targets. The analysis focuses on indicators with sufficient temporal coverage and cross-country comparability to support trend analysis and benchmarking. While the selected indicators do not capture the full breadth of the Green Plan, they provide a consistent, internationally comparable basis for evaluating Singapore's sustainability performance.

Selection of indicators

Indicator	2030 Green Plan Goal	Explanations
Energy intensity level of primary energy [SDG 7] Unit: MJ/$2017 PPP GDP	Energy Reset Green Economy	Proxy for energy efficiency *Lower* = more efficient energy use and progress toward decoupling economic growth from energy consumption
Renewable energy consumption [SDG 7] Unit: % of total final electricity consumption	Energy Reset Green Economy Resilient Future	Proxy for the adoption of clean and renewable energy sources in the energy mix *Higher* = progress toward decarbonising electricity generation

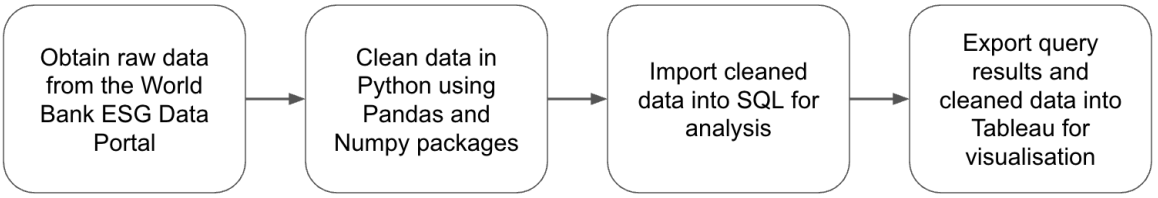
CO2 emissions [SDG 9] Unit: metric tons per capita	Energy Reset Sustainable Living Resilient Future	Proxy for carbon intensity and the environmental footprint of economic and industrial activity *Lower* = lower environmental footprint
R&D expenditure [SDG 9] Unit: % of GDP	Green Economy	Proxy for innovation capacity and investment in technological advancement *Higher* = stronger foundation for green technologies, productivity improvements, and long-term sustainable growth
PM 2.5, mean annual exposure [SDG 11] Unit: μg/m³	City in Nature Sustainable Living	Proxy for air quality and environmental health outcomes *Lower* = greener and more sustainable living environments
Adjusted net savings, excluding particulate emission damage [SDG 12] Unit: % of GINI	Sustainable Living Green Economy Resilient Future	Proxy for long term economic and environmental sustainability *Higher* = current growth is sustainable over time

Selection of peers

Country	Reason
United States	Global superpower, major advanced economy with high per-capita emissions and strong technological capacity, providing a contrast case for decarbonisation pathways
UK	Global superpower, early climate policy leader with legally binding net-zero targets and mature energy transition policies.
Finland	Top in the world in terms of sustainability ranking, high-performing OECD country with consistently strong environmental and sustainability outcomes, used as an aspirational benchmark.
Australia	Similar ESG performance to Singapore, advanced Asia-Pacific economy with resource-intensive sectors and contrasting decarbonisation challenges.
Hong Kong	Similar ESG performance to Singapore, regional peer Dense, service-oriented city economy with land constraints and imported energy dependence, closely comparable to Singapore.
Japan	Similar ESG performance to Singapore, regional peer Advanced Asian economy with high energy import dependence and industrial decarbonisation challenges.
Korea	Similar ESG performance to Singapore, regional peer

	Manufacturing-intensive advanced economy undergoing energy and industrial transition.

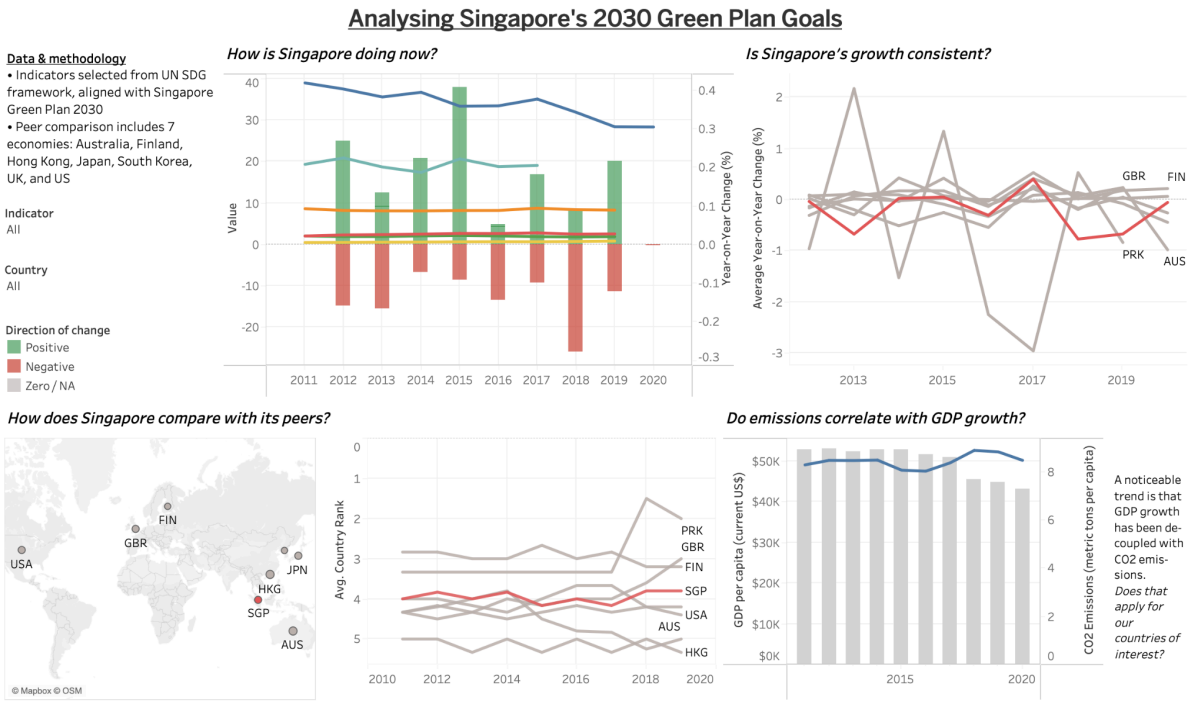
Methodology



Python	SQL	Tableau
• Change from wide to long format • Remove NA values • Change variable/value names • Clean strings	• Year-on-year changes using window functions • Aggregations • Rank-based analysis • Filters and joins	• Double axis line/bar charts to show changes in absolute values and % growth • Dashboard creations • Filters and interactive components

Results

Interactive Tableau dashboard on Tableau Public: Link



Overall, Singapore has made steady but uneven progress toward its 2030 Green Plan objectives. While economic growth is increasingly decoupled from emissions and performance remains competitive relative to peers, greater consistency and acceleration will be required to achieve long-term sustainability targets.

Key takeaways:

1) Singapore shows **moderate progress** toward Green Plan goals, but improvements are **uneven over time**.
2) Performance is **competitive relative to peers**, though not leading.
3) Economic growth is increasingly **decoupled from emissions**, supporting the Energy Reset and Green Economy pillars.
4) Greater **consistency and acceleration** will be needed to meet 2030 targets.

Limitations

Data availability poses several limitations to this analysis:

1) Publicly available ESG and sustainability data remain uneven across indicators, constraining the breadth of metrics that can be consistently benchmarked.
2) Data gaps for certain SDG-aligned indicators limited their inclusion, resulting in a narrower representation of some Green Plan pillars.
3) For several indicators, the most recent year of available data was 2020, which may not fully capture recent policy developments or post-pandemic trends.