

Taiwan's Government Lacks the Ability to Generate Enough Energy (Dirty Fossil Fuel/Zero-Emissions) To Maintain/Grow Taiwan's Technological Leadership, Let Alone Become a Global Leader in AI and New Industries

- **The Taiwan Government is Incapable of Delivering Enough Energy (Dirty Fossil/Zero-Emissions) for Current and Future Societal Needs²**
- **There is No Satisfactory Concrete Plan to Meet the Current Growth and Projected New and Additional Energy (Dirty Fossil/Zero-Emissions) Needs of New Industries i.e. AI, Semiconductors, Data Centers, EVs¹**

By Nicholas V. Chen*

*Special thanks to Jose Ponce, Shelley Cheng, Eliotte Lin, Coral Hazeldine, Lei Hsin, James Lee, Darin Lin, Mehek Berry, Andrew Tsang

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1. [Quotes by Taiwan's Business Leaders and Experts on Insufficient Zero-Carbon Energy](#)

2. [Developmental Economics Economists Quotes on Energy and Economic Development](#): Developmental Economists Agree on the Critical Role of Energy, Especially Zero-Carbon Energy in Economic Development and Poverty Alleviation

The 38 contributors/co-authors of this deck/attachments from 14 jurisdictions represent a broad, global spectrum of the young generation.

They have a direct vested interest to ensure that effective global solutions are systematically and globally implemented to address/reverse the global Climate Catastrophe created by the current and prior generations by removing accumulated GHG/Heat and reducing new GHG/Heat (“R/R”).

They are witnesses and victims of the Climate Catastrophe caused by the fossil fuel industry and their passive cooperators (Governments, Financiers, Industry, Media).

They expect the world’s leaders to stop the soulless “business as usual” and to do all things necessary to implement all forms of climate solutions that lead to R/R of GHG/Heat to ensure the survival of humanity and all living beings.

They are not motivated by profit and they have no conflicts of interest.

They are direct stakeholders and represent the hopes and dreams of future generations and all living beings on Earth.

These 38 young people from 14 different jurisdictions prepared this information over a 5 year period



Australia

- Cindy Li, Imperial College London '23, Georgetown Law '24



India

- Mehek Berry, University of Toronto '25



South Africa

- Shelly Cheng, National Chi Nan University, MBA



United Kingdom

- Coral Hazeldine, Hsinchu International School '25



Costa Rica

- Juan Madrigal, National Chengchi University, MBA



Honduras

- Jose Mario Ponce, National Taiwan University '19



Mexico

- Nicolas Torres, University of Nottingham '28



Singapore

- Hongyi Shen, Yale '23



Thailand

- Pirawat Punyagupta, Yale '21, Schwarzman Scholar, Tsinghua University '24



Canada

- Anne Lu, Yale '20
- Darrin Lin, U Penn '28



Hong Kong

- Andrew Tsang, King's College London '25
- Jacky Fung, Yale '17, Hong Kong University Law School '19



Taiwan

- Ellen Tung, Santa Clara University School of Law '20
- George Shen, Yale Law '22
- Karen Wu, Tufts '21
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China

- William Chao, Yale '21, Columbia Law '24
- Meiting Chen, Yale '21
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- Josie Tai, Yale '20



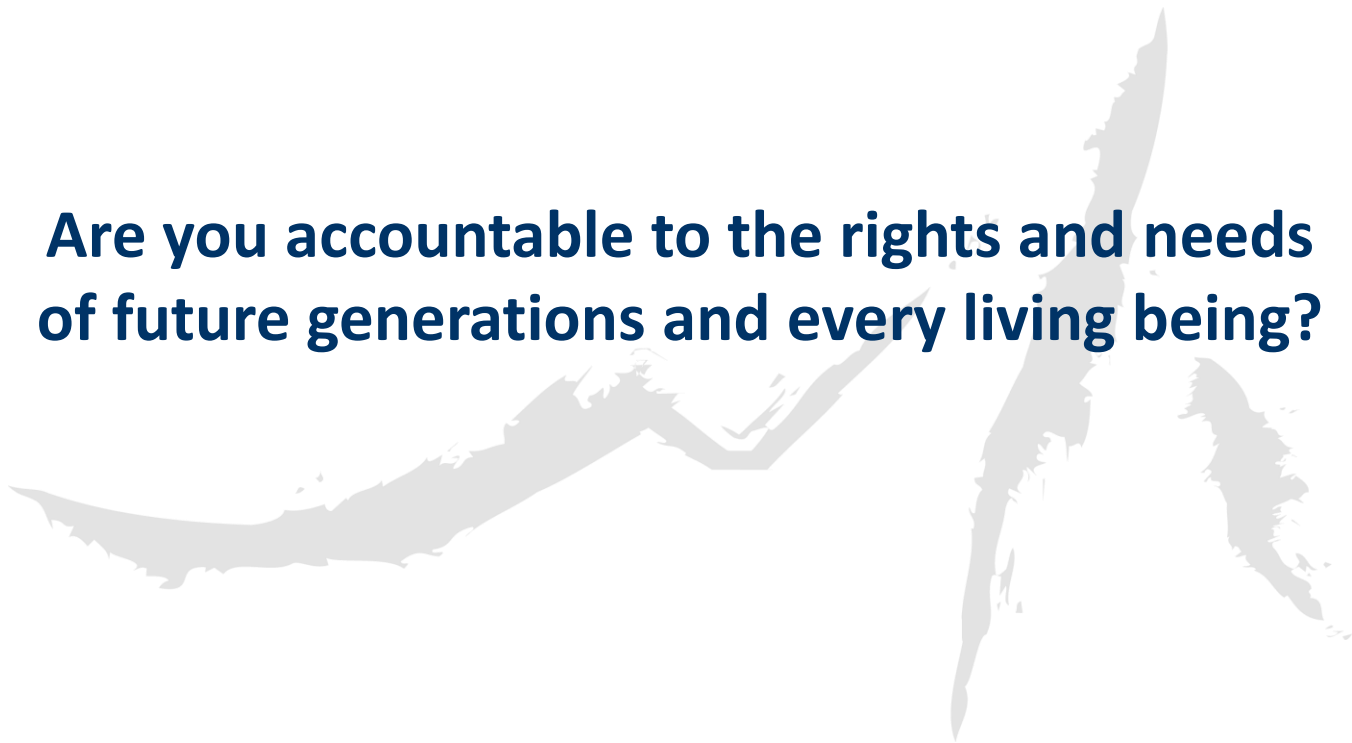
United States

- Meng Fei Shen, Yale '19
- Jeffrey Fu, Yale '20, Columbia Law '23
- Lilian Hua, Yale '21
- Brandon Lu, Yale '21
- Samuel Pekats, Yale '21, Yenching Academy Beijing University '24
- Brendan Campbell, Yale '21, Schwarzman Scholar, Tsinghua University '25
- Nicole Zhen, Yale '22
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- Susan Chen, Yale '20
- Zachary Black, Yale '23, Yenching Academy Beijing University '24
- Max Chen, NYU '19
- Claire Hong, Pitzer '25
- James Lee, King's College London '26
- Victoria Lee, UCI '16
- Phoebe Autio, University of British Columbia '20
- Lei Hsin, Mount Holyoke '26
- Elliotte Lin, Texas A&M University '28

These young people, speaking for the future generations and all living beings want to know...

Are You Going to be Part of the Problem or Part of the Solution?

Are you accountable to the rights and needs of future generations and every living being?



Are you Going to Let Them Down?





Tek Young Lin – Earth Day One
April 22, 1970

Executive Summary

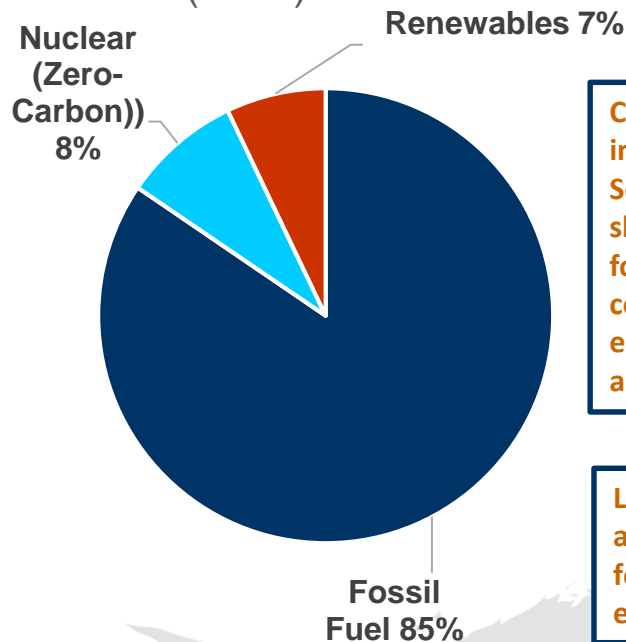
- The DPP Government claims it will be a leader in AI and new industries. However, the Government has failed to provide enough energy (dirty fossil and zero-carbon) to satisfy the current and projected growth needs of existing users, let alone future societal and projected new industry demand. If the energy exists, then show the world.
- The DPP Government has no concrete plan to achieve decarbonization and energy transition to comply with international green requirements, which would preserve supply chain access to export markets. There is no decarbonization and energy transition plan to implement, only greenwash. If these exist, then show the world.
- All large industrial players/manufacturers/supply chains know that the looming 2025 power crunch is caused by the DPP Government's failure to supply enough (dirty fossil and zero-carbon) energy.
- Due to the DPP Government's catastrophic failure to deliver decarbonization and energy transition, Taiwan supply chains will accelerate mass migration to zero-carbon energy jurisdictions and cause the hollowing out of the Taiwanese economy. According to the government's own records, over each of the last five years, Taiwan saw a 15% annual rise in outbound investment¹. Outbound investment increased 170% from 2023 to 2024².

See: [Taiwan's Global Supply Chains](#)
See: [Brave New World](#)

Taiwan Mission Impossible

- The DPP Government has no way to achieve decarbonization and energy transition
- The math does not work
- The DPP Government's greenwash does not work

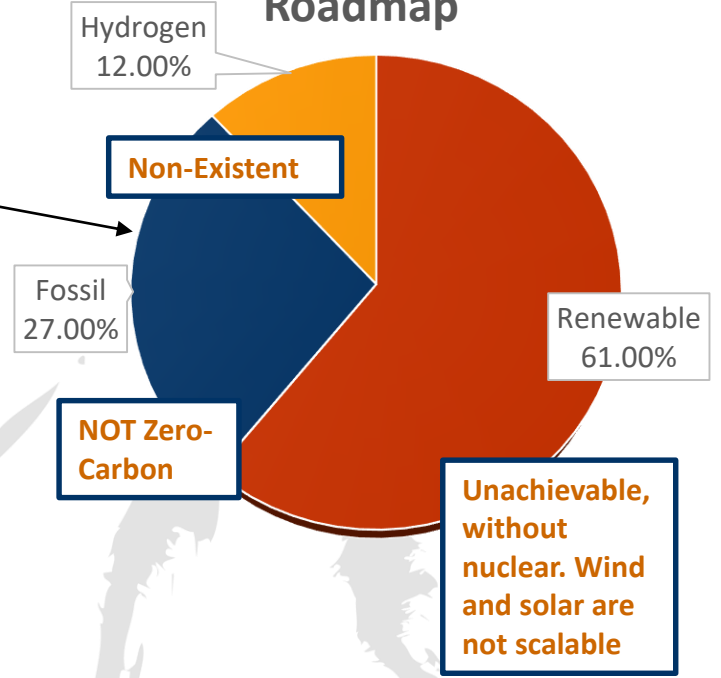
Taiwan's Current Energy Reality (2024)



Cornell study published in the Journal of Energy, Science and Engineering shows LNG has a carbon footprint 33% larger than coal due to associated emissions from extraction and shipping¹.

LNG is still a fossil fuel and it is not a solution for decarbonization and energy transition

Electricity Generation in 2050 According to Taiwan Government's "Carbon Neutral" Roadmap



Journal of Energy Science and Engineering: The greenhouse gas footprint of liquefied natural gas (LNG) exported from the United States: by Cornell Professor Robert W. Howarth (peer-reviewed and publicly backed by over 100 scientists)
<https://scijournals.onlinelibrary.wiley.com/doi/10.1002/ese3.1934>

Fairy Tales vs. Facts

“Taiwan will be transformed into an **“AI Island”** to keep Taiwan as a global leader of new technology research and development”¹

“The government will ensure a stable power supply and provide a wide range of green energy sources.”
- President Lai, Computex 2024²

How?



Beef?

- ▶ The Taiwan Government has failed to deliver enough energy for current societal needs, let alone for projected growth and new industries.
- ▶ In the past 8 years there have been 4 major power outages and each outage left between 1.5 - 6 million households and all of Taiwan's 3 science parks without power. Rolling blackouts and brownouts are commonplace. All of Kinmen lost power on July 9, 2024³.
- ▶ The Taiwan Government has only delivered 7% renewable energy and 93% dirty fossil based energy⁴.
- ▶ The Taiwan Government has no satisfactory concrete plans that meet the projected power (fossil/green) needs of society and achieve the global community goal of decarbonization and energy transition (replace fossil fuel based energy with baseload, scalable, zero-carbon energy).



President Lai

Source: 1. President vows to turn Taiwan into 'AI Island' <https://www.taipeitimes.com/News/front/archives/2024/06/05/2003818882>
2. President Lai reiterates commitment to providing stable energy supply <https://focustaiwan.tw/business/202406040011>
3. Power outages affect Taoyuan airport, Kinmen
4. Taiwan's Electrical Grid and the Need for Greater System Resilience <https://www.taipeitimes.com/News/taiwan/archives/2024/07/10/2003820601>
<https://globaltaiwan.org/2023/06/taiwans-electrical-grid-and-the-need-for-greater-system-resilience/>
4. Taiwan Energy Profile Our world in Data Electricity Production by Source: <https://ourworldindata.org/energy/country/taiwan>

The Global AI Race: Taiwan

- The Taiwan Government claims Taiwan will become an “AI Island”
- For Taiwan to become an AI island it needs to¹:
 - ▶ Construct advanced data centers
 - ▶ Ensure a stable zero-carbon energy supply
 - ▶ Cultivate AI talent
- Currently, none of these are happening
- Taiwan is not innovating in AI, Taiwan is simply a training ground due to its advanced OEM and semiconductor ecosystem (hardware)¹
- Taiwan will not be able to become a true competitor in the AI space because of the government’s failure to supply sufficient zero-carbon energy

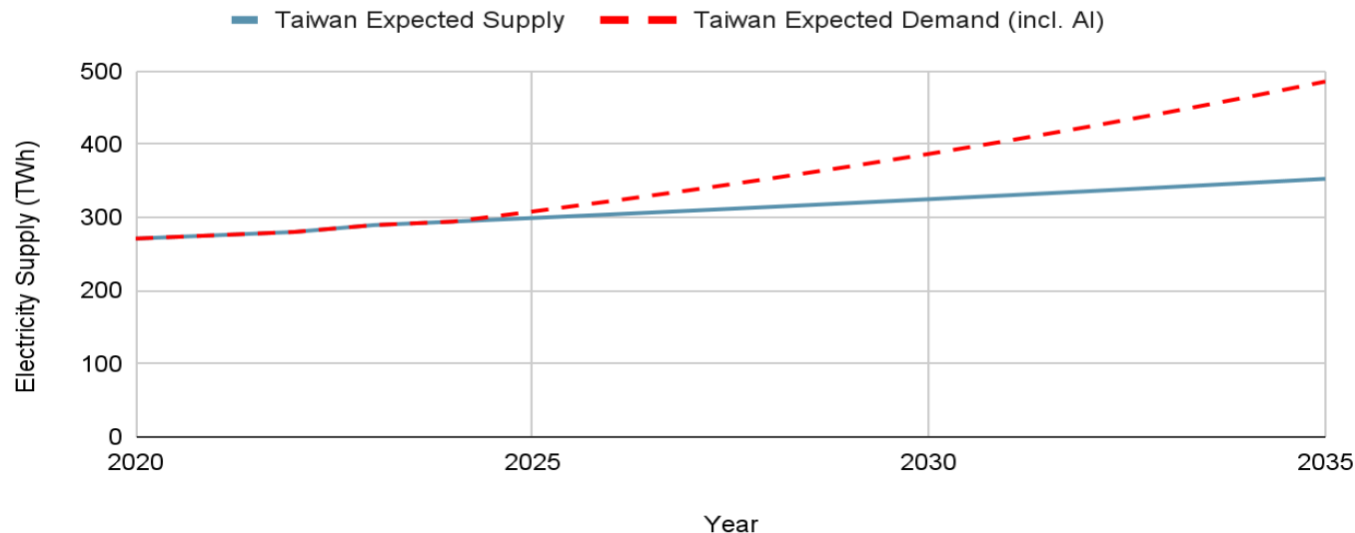
1. The AI Olympics: Does Taiwan have the power to compete?:

https://www.taipeitimes.com/News/feat/archives/2024/09/04/2003823231?fbclid=IwY2xjawFnLuVleHRuA2FibQIxMAABHa4paB2IUr4Vz6kWkOqxpMaNWFzZsGT400UO-3ulK_N2PebGHWS8XqnbA_aem_utFGfCZ669oFpfcZtoi7AQ

Mission Impossible: The Taiwan Government Lacks the Ability to Generate Enough Energy (Dirty Fossil/Zero-Carbon) to Become a Leader in AI

- From 2003 to 2023 Taiwan's average annual electricity generation growth was 1.66%¹
- AI needs will demand a ~3% annual electricity generation growth starting 2025²
- "Projections indicate that AI servers could consume energy equivalent to entire countries by 2027. Energy demands of advanced AI are expected to outstrip current energy production and transmission capacities".³
- Taiwan needs to at least double its current yearly electricity generation rate to keep up with growing and new AI demand

Taiwan Cannot Become an "AI Island," AI Energy Demand Outpaces Expected Supply



Taiwan needs to double its current installed energy capacity (~64GW) by 2035 to keep up with growing existing and new AI demand

1. MOEA Energy Statistics Handbook 2023 https://www.moeaea.gov.tw/ECW_WEBPAGE/FlipBook/2023EnergyStaHandBook/index.html#p=72

2. Power supply for AI-driven demand sufficient until 2028: Minister

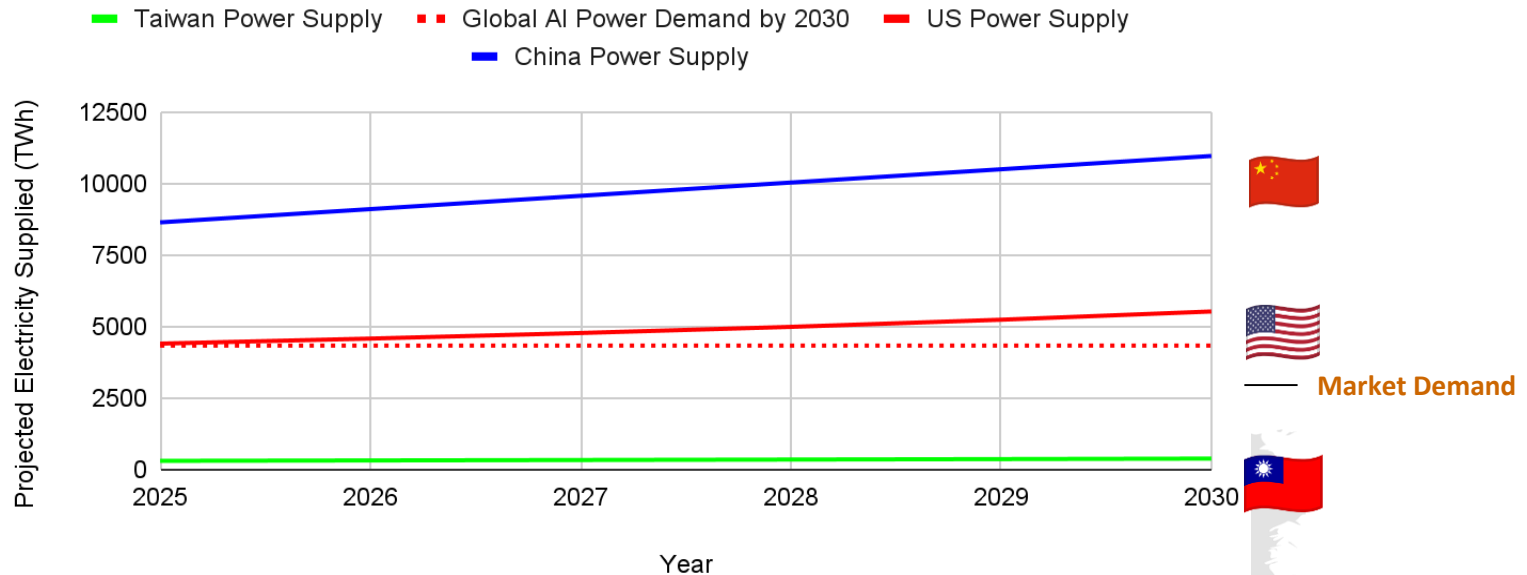
<https://focustaiwan.tw/business/202406120014#:~:text=During%20the%20meeting%2C%20Kuomintang%20lawmaker,Corp.%2C%20was%20factored%20into%20the>

3. Energy Consumption Ramifications of US-China AI Competition- Joyce Guo et.al, Yale Jackson School of Global affairs. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4839772

The Global AI Race

- “Energy demands of advanced AI are expected to outstrip current energy production and transmission capacities...overall use of energy is anticipated to increase, creating tension between AI ambitions and clean energy targets”.¹
- How can Taiwan dominate AI when it is projected to only produce 3.36% of the power needed to meet global AI power demand by 2030?² How can Taiwan meet its energy transition goals?
- The DPP government claims are shameful boasting, given the facts

Taiwan, US and China Projected Electricity Supply and Global AI Demand by 2030



1. How to Bridge the US Energy Supply Gap to Meet the Rising Demands for Compute Power in the Era of Generative AI, Joyce Guo, et. Al. Yale Jackson School of Global Affairs. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4887664

2. SITUATIONAL AWARENESS: The Decade Ahead <https://situational-awareness.ai/>

The Global AI Race: China

- China is making breakthroughs in AI despite US sanctions
- China's total computing power grew 25% in the first half of 2024¹
- China Academy of Information and Communications Technology (CAICT), showed that China accounted for 26% of the world's total computing power¹
- In 2022 China launched the “Eastern Data and Western Computing” project that includes building 10 computing AI clusters across China
- “China has developed a single generative AI (GAI) model across multiple data centers — a massive feat considering the complexity of using different GPUs in a single data center, let alone using servers in multiple geographic locations”²
 - Patrick Moorhead, Chief Analyst at Moor Insights & Strategy
- China has been melding GPUs from different brands into one training cluster to combine their limited stocks of sanctioned high-end, high-performance chips²

1. China beefs up computing power by 25% as AI race drives demand: <https://archive.ph/2024.09.29-082326/https://www.scmp.com/tech/article/3280420/china-beefs-computing-power-25-ai-race-drives-demand>

2. China makes AI breakthrough, reportedly trains generative AI model across multiple data centers and GPU architectures :<https://www.tomshardware.com/tech-industry/artificial-intelligence/china-makes-ai-breakthrough-reportedly-trains-generative-ai-model-across-multiple-data-centers-and-gpu-architectures>

The Global AI Race: Not Just US, China and Taiwan

- Many countries, in different languages are developing and expanding their AI capabilities
- For example, Saudi Arabia, the UAE and Qatar, that could influence the outcome of the global AI race¹.
- Middle Eastern countries are energy-rich, making them essential for powering data centers that require massive amounts of energy for AI¹.
- Sovereign wealth funds (not just in the Middle East) are channeling billions into modernization and AI infrastructure, making them significant customers and investors in AI technologies¹.
- The Middle East is a strategic location facilitating efficient data delivery to Europe, Asia and Africa, making it an ideal hub for data centers and AI operations¹.

1. Swing Vote of Global AI Competition: the Middle East: https://interconnect.substack.com/p/swing-vote-of-global-ai-competition?r=17h2p&utm_campaign=post&utm_medium=web&triedRedirect=true

Fairy Tales vs. Facts

“Taiwan will be able to run at least 6 AI data centers by the end of 2025”

-Minister of Economic Affairs J.W Kuo ¹

How?



Beef?

- ▶ Open AI stated that in order to maintain dominance in AI they would need to build 5-6 data centers that are 5GW each (30GW total)²
- ▶ Taiwan’s total electricity capacity is 64GW
- ▶ Taiwan’s 3 nuclear power plants (2 have been shut down) have a total capacity of 5.1GW.
 - ▶ Taiwan needs 18 more reactors, 6x the current capacity to reach 30GW by 2025 for the Minister’s claim to be true
 - ▶ How can Taiwan achieve a 488% increase from 5.1GW to 30GW by 2025 for the Minister’s claim to be true?
 - ▶ How can Taiwan build 18 new nuclear power plants (assuming current designs) to meet future demands by 2025 for the Minister’s claim to be true?
- ▶ Taiwan only has 7%³ installed renewable energy capacity
 - ▶ How can Taiwan increase its current renewable capacity by 6.14x to reach 50% of total 64GW?



Minister of Economic Affairs J.W Kuo

Source: 1. Minister Kuo touts AI data center power plans <https://news.ltn.com.tw/news/focus/breakingnews/4696609>

2. OpenAI Pitched White House on Unprecedented Data Center Buildout: <https://www.bnnbloomberg.ca/business/technology/2024/09/25/openai-pitched-white-house-on-unprecedented-data-center-buildout/>

3. Taiwan Energy Profile Our world in Data Electricity Production by Source: <https://ourworldindata.org/energy/country/taiwan>

Fairy Tales vs. Facts

“Taiwan will be able to run at least 6 AI data centers by the end of 2025”

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How?



Beef?

- ▶ The DPP Government has failed to provide enough energy (dirty fossil and zero-carbon) to satisfy the current and projected societal demand
- ▶ In the past 8 years there have been 4 major power outages and each outage left between 1.5 - 6 million households and all of Taiwan’s 3 science parks without power.² Rolling blackouts and brownouts are common place. All of Kinmen lost power on July 9, 2024.
- ▶ “The operating margin on the grid — the buffer between supply and demand ought to be 25% in a secure system. In Taiwan,, there have been several occasions this year when the margin was down to 5% It shows that the system is fragile”³
 - Angelica Oung, Journalist and Founder of the Clean Energy Transition Alliance



Minister of Economic Affairs J.W Kuo

Source: 1. Minister Kuo touts AI data center power plans <https://news.ltn.com.tw/news/focus/breakingnews/4696609>

2. Taiwan’s Electrical Grid and the Need for Greater System Resilience <https://globaltaiwan.org/2023/06/taiwans-electrical-grid-and-the-need-for-greater-system-resilience/>

Isabel Hilton, Why Taiwan and Its Tech Industry Are Facing an Energy Crisis: <https://e360.yale.edu/features/taiwan-energy-dilemma>

Fairy Tales vs. Facts

“Taiwan will be able to run at least 6 AI data centers by the end of 2025”

-Minister of Economic Affairs J.W Kuo ¹

How?



Beef?

- ▶ How will the DPP government ensure current/growing industrial energy demand is met before generating an additional 30GW by 2025?
- ▶ How will the DPP government ensure current/growing agricultural energy demand is met before generating an additional 30GW by 2025?
- ▶ How will the DPP government ensure current/growing residential and commercial energy demand is met before generating an additional 30GW by 2025?



Minister of Economic Affairs J.W Kuo

Fairy Tales vs. Facts

“Taiwan will be able to run at least 6 AI data centers by the end of 2025”

-Minister of Economic Affairs J.W Kuo ¹

How?



Beef?

- ▶ How will the DPP government ensure sufficient energy supply for the projected growth of current industries, let alone the needs of new industries?
- ▶ The rise of AI is pushing TSMC to migrate semiconductor manufacturing to Europe, especially to Germany and Czech Republic². **The migration has already started and will continue to accelerate.**
- ▶ TSMC has started construction of a fab in Dresden and they are planning more fabs for the future. They are also migrating to the US and Japan³
- ▶ TSMC alone consumes more than 8% of Taiwan’s total electricity. For the past four years, TSMC's total energy usage has grown 10%-20% annually².
- ▶ TSMC’s energy demand is expected to triple by 2030³.
- ▶ How will the DPP ensure TSMC has enough zero-carbon energy by 2030 let alone for new industries?



Minister of Economic Affairs J.W Kuo

Source: 1. Minister Kuo touts AI data center power plans <https://news.ltn.com.tw/news/focus/breakingnews/4696609>

2. TSMC plans more Europe fabs: official: <https://www.taipeitimes.com/News/biz/archives/2024/10/15/2003825296>

3. The world's largest chipmaker TSMC is about to be tested as it uses more and more power: <https://www.businessinsider.com/tsmc-taiwan-electricity-supply-growth-2024-10>

Fairy Tales vs. Facts

“Taiwan is considering setting up renewable power plants in neighboring countries, such as the Philippines, and transporting the electricity back home [via ships or submarine cables] to meet the green power needs of Taiwanese”

-Minister of Economic Affairs J.W Kuo. October 15, 2024 ¹

How?



Beef?

- ▶ The next day on October 16, Minister Kuo publicly apologized in front of the legislature who claimed *“his remarks were perceived as unrealistic and not well thought-out”*²
- ▶ Minister Kuo stated the DPP Government has *“No concrete plans”*²
- ▶ DPP legislator, Lin Tai-hua (林岱樺) criticized Kuo’s idea mentioning how submarine cables from Taiwan to Penghu took 13 year to build at a cost of ~USD500 million²
- ▶ *“The laying of cables to the Philippines would be five times that length and the expense [~USD2.5 billion]... the Bashi Channel is 2,000m to 3,000m deep and it has undersea canyons which would make construction very difficult”* - Lin Tai-hua (林岱樺)
- ▶ Why would the DPP government not use a small fraction of the funds (20% of USD2.5 billion) instead to buy dry-casks to solve the spent nuclear fuel crisis to re-open and operate Taiwan’s nuclear plants (“NPPs”) for 40 more years?²
- ▶ What happened to the funds for dry casks for the initial 40-year term of Taiwan’s NPPs?
- ▶ Why were dry casks not available on a FIFO basis to store spent fuel, currently constipated in the reactor cores and spent fuel pools, which is the global SOP? [See: [Taiwan’s Spent Nuclear Fuel Safety Crisis](#)]
- ▶ Why is the DPP government willing to forgo the benefits of keeping the nuclear power plants open? (See Slide 39)
- ▶ Why is the DPP government proposing outrageous ideas to increase renewable energy in another energy deficient country and pay to transport it to Taiwan? Why not build more zero-carbon energy sources in Taiwan? Why are you continuing to refuse to do your job? **Green Power to the People!**

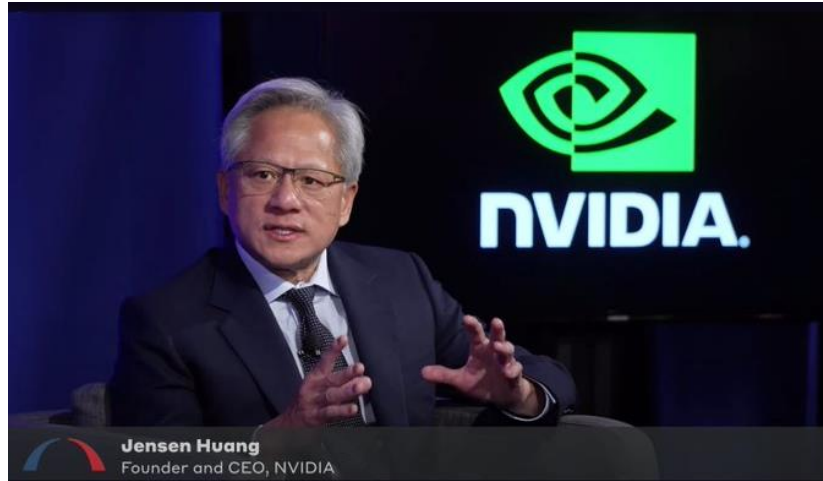


Minister of Economic Affairs J.W Kuo

Source: 1. Taiwan eyes power plants abroad: <https://www.taipeitimes.com/News/front/archives/2024/10/16/2003825369>

Source 2: J.W. Kuo apologizes for power plant remarks: <https://www.taipeitimes.com/News/taiwan/archives/2024/10/17/2003825445>

Fairy Tales vs. Facts



“It is impossible to win the AI race without nuclear [energy]”¹

- Jensen Huang, Interview by the Bipartisan Policy Center, Washington D.C.
September 27, 2024

Fairy Tales vs. Facts

- ▶ Taiwan is the 22nd largest GHG emitter per capita on the planet and is a global climate laggard/pariah¹.
- ▶ The whole world knows that in order to plan/operate AI data centers, adequate supplies of stable, zero-carbon energy supply is a pre-condition. AI data centers cannot exist without sufficient green energy. Taiwan is the only government talking about AI data center rollout/expansion, without regard to the almost complete lack of green energy. Basic math and hard science apply except in the Twilight Zone.
- ▶ The global solution for running many AI data centers is to co-locate with nuclear power plants. Taiwan is the only jurisdiction not discussing this solution,² but instead is closing down nuclear despite 59% of public support to keep nuclear power plants open.

Fairy Tales vs. Facts

The market doesn't lie. It is clear the global tech industry is pursuing zero-carbon, nuclear energy and SMRs to power the AI future. Why are Taiwan's leaders contradicting the global trend?

- ▶ The largest US nuclear power operator (Constellation Energy) is expanding its nuclear capacity based on the projected demand and rollout of AI data centers¹.
- ▶ Japan is in the process of restarting 13 nuclear reactors to compete in the race for AI data center demand². NVIDIA backed company, Ubitus K.K., is planning to co-locate a data centers close to nuclear power plants. *“Nuclear is still the most competitive option in terms of cost and the scale of supply”* - Lesley Kuo, Ubitus KK, CEO³. Japan is in the process of eating Taiwan's semiconductor, AI and tech lunch.
- ▶ Constellation Energy and Microsoft announced a 20-year PPA in which one of the reactors at the Three Mile Island nuclear power plant would be brought back online to exclusively serve Microsoft's energy needs (800MW) for data centers that support AI⁴.

1. Constellation Energy to Pursue New Nuclear Power for Data Centers <https://carboncredits.com/constellation-energy-to-pursue-new-nuclear-power-for-data-centers/>
2. Japan shifting back to nuclear to ditch coal, power AI: <https://www.thestandard.com.hk/breaking-news/section/6/221701/Japan-shifting-back-to-nuclear-to-ditch-coal,-power-AI>
3. Nvidia-Backed Firm Eyes Data Center Near Japan's Nuclear Power: <https://www.datacenterknowledge.com/energy-power-supply/nvidia-backed-firm-eyes-data-center-near-japan-s-nuclear-power>
4. Three Mile Island nuclear power plant to support AI: <https://www.usatoday.com/story/money/energy/2024/09/20/three-mile-island-nuclear-plant-constellation-microsoft-deal/75307770007/#m1bpo7u9ovhnmua1de>

Fairy Tales vs. Facts

- ▶ Amazon Web Services signed a PPA with Talen Energy to support a 960MW data center with electricity coming from the Susquehanna nuclear power station¹.
- ▶ Amazon made a USD500 million investment into SMR developer X-energy to develop and deploy 5GW of SMRs to power its AI energy needs².
- ▶ Green Energy Partners and IP3 International (two large utilities), have teamed to provide enough combined green energy from traditional nuclear, SMRs, hydrogen and other renewables to power 30 AI data centers in the Surry Green Energy Center industrial park (Virginia)³.
- ▶ Google's CEO, Sundar Pichai said the company is actively looking at nuclear energy, especially Small Modular Reactors ("SMRs") to meet increasing energy demand for AI data centers and achieve net-zero across its operations by 2030⁴.
- ▶ Brazil is looking to deploy a network of Russian SMRs to supply AI data centers. *"With the entry of artificial intelligence and data centers, which will require three times more energy than the world produces, nuclear energy will be indispensable and Brazil cannot miss this window"* – Alexandre Silveira- Brazilian Mines and Energy Minister⁵

1. Amazon Going Nuclear? Hiring Plans Indicate Company May Be Eyeing Nuclear To Meet Energy Needs https://www.benzinga.com/markets/equities/24/09/40969515/amazon-going-nuclear-hiring-plans-indicate-company-may-be-eyeing-nuclear-to-meet-energy-needs?utm_source=SmartNews&utm_campaign=partner_feed&utm_medium=partner_feed&utm_content=site

2. Amazon Investing in SMRs to Deploy 5GW by 2039: <https://www.ans.org/news/article-6480/amazon-investing-in-smrs-to-deploy-5gw-by-2039/>

3. Hydrogen Production, SMRs Touted for Virginia Data Center Hub <https://www.powermag.com/hydrogen-production-smrs-touted-for-virginia-data-center-hub/>

4. Google Eyes Nuclear Energy to Power AI Data Centers: <https://w.media/google-eyes-nuclear-energy-to-power-ai-data-centers/>

5. Trip to Russia planned to acquire network of small nuclear reactors <https://noticiabrasil.net.br/20240628/pequenos-reactores-nucleares-na-amazonia-tecnologia-russa-ajuda-o-brasil-na-transicao-energetica-35349558.html>

6. Big Tech Goes Nuclear-Helen Zhang: <https://archives.internationalintrigue.io/p/big-tech-goes-nuclear>

Fairy Tales vs. Facts

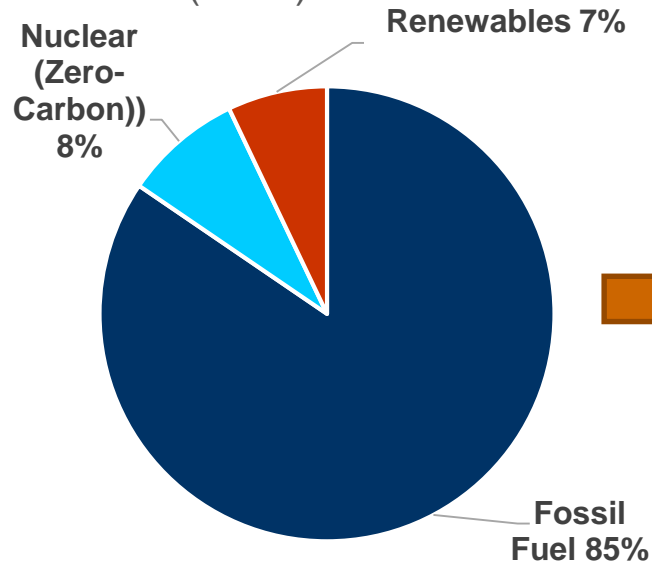


“Nuclear is a wonderful way forward as one of the sources of...sustainable energy. It won't be the only one. We're going to need energy from all sources and balance the availability and the cost of energy as well as the sustainability over time.”¹

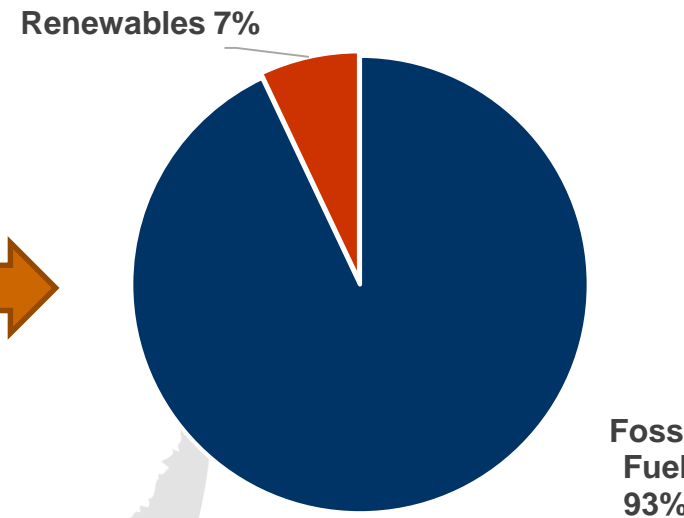
- Jensen Huang, Interview by Bloomberg
September 27, 2024

Hard Facts vs Harder Facts

Taiwan's Current Energy Reality
(2024)



Taiwan's Energy Reality in
2025



- 2018 referendum: 59% of voters want nuclear energy.
- Why is the DPP forcing the government to shut down nuclear power against the will of the people?
- Why is the DPP going against the global trend of decarbonizing and expanding nuclear energy (55+ countries are expanding nuclear energy)? [See: [Taiwan's Spent Nuclear Fuel Safety Crisis](#)]
- How will the government replace fossil energy with zero-emissions sources to meet global requirements? [See: [Taiwan's Global Supply Chains](#)]
- How will the DPP government solve the spent nuclear fuel mismanagement? [See: [Taiwan's Spent Nuclear Fuel Safety Crisis](#)]

- DPP forces the Taiwan Government to shut down baseload, zero-carbon nuclear power in 2025, 40 years before the 80 year lifespan. Why?
- How to justify forgoing 1.7 billion avoided tons of CO2 (332 million cars), 1,787,040 GWh of generated power and USD411 billion dollars in revenue (see slide 39)
- DPP goes against global trends and is an eco-pariah by replacing zero-emissions nuclear with dirty, expensive and unavailable LNG.
- DPP has no concrete plans to achieve the global community goal of decarbonization and energy transition.
- DPP is pushing a hollow public relations fantasy. [See: [Are All of Taiwan's Climate Pledges Greenwashing Failures and Not in Compliance with UN Standards?](#)]
- Entire Taiwanese industry supply chains are mass migrating to green energy jurisdictions. [See: [Taiwan's Global Supply Chains](#)]
- Taiwan loses ability to export to developed markets. [See: [Brave New World](#)]
- [70% of export dependent GDP will suffer.](#) ("Taiwan Exports." Trading Economics,)
- The economy will hollow out and jobs, revenue and tax revenue will be exported.

Hard Questions, Hard Numbers, Hard Truth!!!

- **How will the DPP Government ensure sufficient energy supply for the projected growth of current industries, let alone the rise of new industries?**
 - ▶ Semiconductors
 - ▶ AI
 - ▶ Data Centers
 - ▶ Advanced Manufacturing
 - ▶ Electric Vehicles
 - ▶ Desalination
 - ▶ Energy Storage
 - ▶ Grid Modernization
- **The arithmetic doesn't add up**
 - ▶ Energy supply cannot keep up with growing energy demand
 - ▶ Fossil fuel based GWs will keep raising GHG emissions
 - ▶ How will the government replace fossil fuels with green energy?
 - ▶ How will the Taiwan government show the world the numbers to reach zero-carbon green energy neutrality?
 - ▶ Greenwash and public relations are not decarbonization and are not energy transition
- **“There is a large gap between aspiration and performance”¹**
 - Angelica Oung, Journalist and founder of the Clean Energy Transition Alliance

Hard Questions, Hard Numbers, Hard Truth!!!

- **Google and Microsoft's GHG emissions surge as they expand on and integrate AI technologies¹**
 - ▶ Google's GHG emissions increased 48% since 2020²
 - ▶ Microsoft's GHG emissions increased 29% since 2020³
- **The primary cause of rise in emissions is the expansion of global data centers and AI computing, according to the companies' (Google and Microsoft's) environmental reports⁴**
- **How can the Taiwan Government secure the massive amounts of energy needed to run Minister Kuo's 6 new data centers? How can such additional massive emissions be reduced to zero-carbon?**
- **The global solution for running many AI data centers is to co-locate with nuclear power plants. Taiwan is the only jurisdiction not discussing this reality and this solution.**
- **How can the Taiwan Government replace fossil fuels with zero-carbon energy?**
- **How can the Taiwan Government reach its net-zero emissions goal given the energy needs of data centers and show the world the hard numbers and the hard truth?**

Source: 1 Google's emissions grow as it powers artificial intelligence <https://www.taipeitimes.com/News/biz/archives/2024/07/04/2003820285>

2. Google 2023 Environmental Report <https://sustainability.google/reports/google-2023-environmental-report/>

3. Microsoft 2023 Environmental Sustainability Report <https://www.microsoft.com/en-us/corporate-responsibility/sustainability/report>

4. Google's Greenhouse Gas Emissions Surge by 48% in Five Years Due To Artificial Intelligence <https://www.spiceworks.com/tech/data-center/news/googles-greenhouse-gas-emissions-surge-due-to-artificial-intelligence/>

Taiwan is a Global Environmental Laggard/Pariah as the 22nd Largest Global GHG Emitter

Rank ↕	Country/Territory	↕ CO ₂ per capita (t)	↕
21	 South Korea	11.9	
22	 Taiwan	11.9	
23	 Libya	11.1	
24	 Saint Pierre & Miquelon	10.5	
25	 Curacao	9.7	
26	 Czechia	9.2	
27	 Anguilla	9.2	
28	 Iceland	9.1	
29	 Greenland	9.1	
30	 Poland	8.6	

Taiwan is a Huge Global Emitter of GHGs

- Taiwan ranks 7th from the bottom according to the 2023 Climate Change Performance Index (“CCPI”) which ranks territories based on their climate performance
- Taiwan scores poorly in the climate policy categories, GHG emissions, energy use, and renewable energy

57.	<u>△ Chinese Taipei</u>	28.35
58.	<u>△ Canada*</u>	26.47
59.	<u>▽ Russian Federation*</u>	25.28
60.	<u>— Korea</u>	24.91
61.	<u>△ Kazakhstan*</u>	24.61
62.	<u>△ Saudi Arabia*</u>	22.41
63.	<u>▽ Islamic Republic of Iran*</u>	18.77



The World is Rapidly Transitioning to Nuclear Energy to Decarbonize.

Taiwan is the Only Territory Shutting Down Nuclear Energy

- 55+ countries currently expanding nuclear capacity, considering, planning or starting nuclear power programs include:
- USA
- China
- South Korea
- Japan
- Germany
- India
- Turkey
- UK
- UAE
- Bangladesh
- Romania
- Ukraine
- Slovakia
- France
- Russia
- Brazil
- Belarus
- Iran
- Argentina
- Albania
- Croatia
- Estonia
- Israel
- Jordan
- Egypt
- Kuwait
- Morocco
- Tunisia
- Sri Lanka
- Kazakhstan
- Pakistan
- Belgium
- Latvia
- Armenia
- Bulgaria
- Canada
- Czech Republic
- Finland
- France
- Hungary
- Mexico
- Netherlands
- Slovenia
- South Africa
- Spain
- Sweden
- Italy
- Mongolia
- Moldova
- Ghana
- Bulgaria
- Switzerland
- Singapore
- Vietnam

Italy Will Re-Introduce Nuclear Energy 35 Years After its Last Reactor Shut Down¹

- *“To have a guarantee of continuity on clean energy, we must insert a quota of nuclear energy. Renewable technologies such as solar and wind power cannot provide the security that we need”*

-Italy’s Energy Security Minister-
Gilberto Pichetto Fratin

- **Italy is introducing legislation to enable investments in small modular nuclear reactors which could be operational within 10 years.**
- **Italy plans for nuclear power to account for at least 11% of the country’s total electricity consumption by 2050.**



Italy’s Energy Security Minister- Gilberto Pichetto Fratin

1. Source: Meloni seeks to bring nuclear power back to Italy <https://www.ft.com/content/a726934b-ba97-4e2c-b60d-e24a227a416f>

Switzerland to Scrap Ban on Building Nuclear Power Stations

- The Swiss Government plans to overturn a ban on building new power plants to strengthen local energy supply at a time of increased geopolitical tension
- *"Over the long term, new nuclear power plants are one possible way of making our supply more secure in a geopolitically uncertain time...Failure to retain the option could be seen as a betrayal by future generations"*

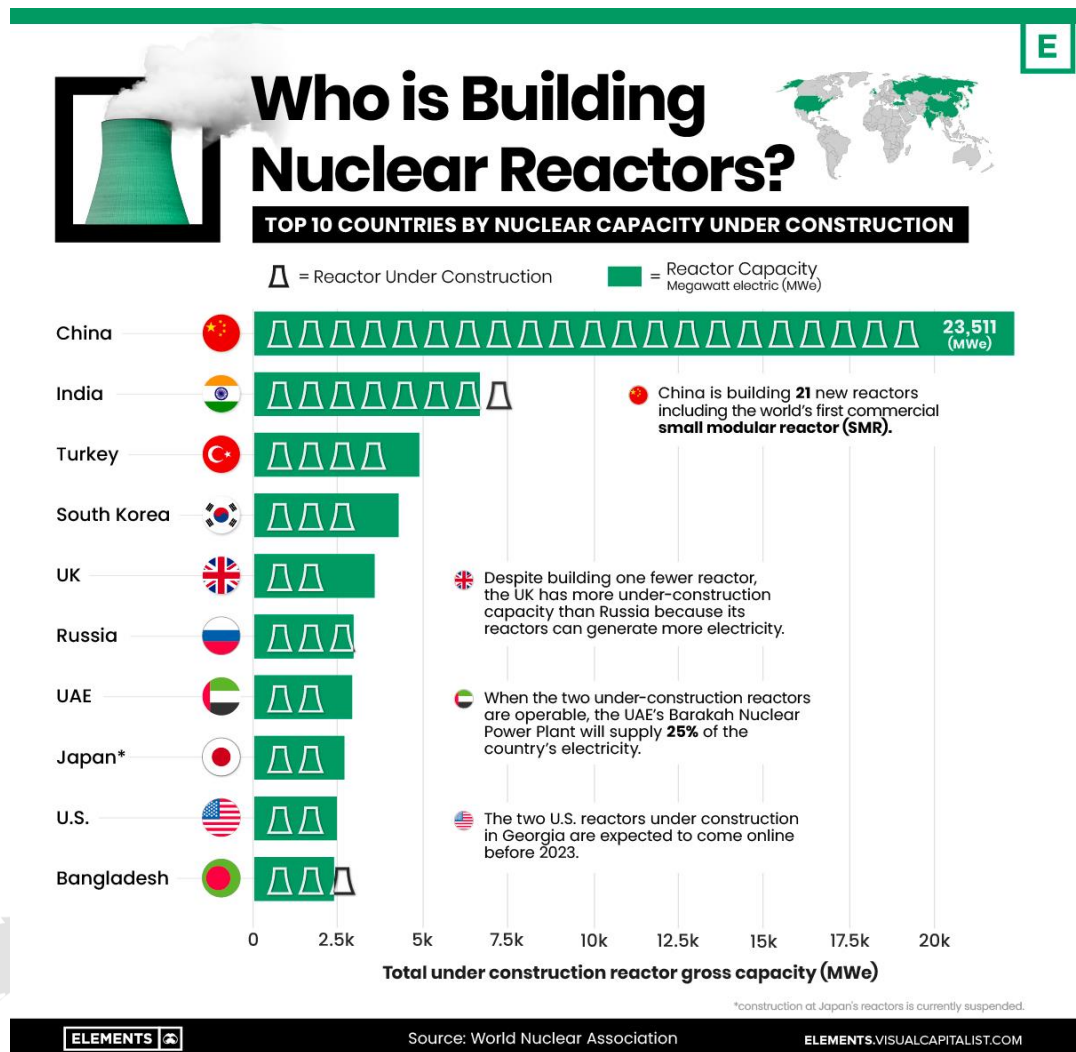
-Albert Roesti, Swiss Energy Minister



Albert Roesti, Swiss Energy Minister

The World is Rapidly Transitioning to Nuclear Energy to Decarbonize. Taiwan is the Only Territory Shutting Down Nuclear Energy

- Why is Taiwan going against the rest of the world and phasing out nuclear energy that is zero-carbon baseload power? 55+ countries have chosen nuclear power unlike Taiwan.
- Nuclear energy is the global solution for decarbonization.
- Nuclear energy is Taiwan's only option to successfully deliver zero-carbon energy to all industries and end-users.
- During COP28 in December 2023, 22 countries* pledged to triple nuclear energy capacity by 2050.



E

Source: <https://elements.visualcapitalist.com/nuclear-reactors-under-construction/>

Source: <https://www.cañarymedia.com/articles/nuclear/20-plus-countries-pledge-to-triple-the-worlds-nuclear-energy-by-2050#:~:text=COP28%20might%20be%20remembered,the%20world's%20annual%20climate%20summit.>

*USA, Bulgaria, Canada, Czech Republic, Finland, France, Ghana, Hungary, Japan, South Korea, Moldova, Mongolia, Morocco, Netherlands, Poland, Romania, Slovakia, Slovenia, Sweden, Ukraine, UAE.

The World is Rapidly Transitioning to Nuclear Energy to Decarbonize. Taiwan is the Only Territory Shutting Down Nuclear Energy

- The IPCC found that nuclear energy generation must at least triple from 2020 levels by 2050 to reach net-zero¹.
- The world could avoid 87 gigatons of cumulative emissions (~20 billion cars) between 2020 and 2050 with a combination of existing reactors, new large-scale reactors and the deployment of SMRs¹.
- The OECD states that nuclear energy and SMRs can provide clean baseload power and support decarbonization in hard-to-abate industrial sectors (heavy industry, resource extraction, hydrogen, synthetic fuel production, desalination and off-grid applications.)¹

The DPP Government Eco-Pledges are a Taiwan Fairytale

- DPP Government has no concrete plan to achieve decarbonization and energy transition.

See: [Are All of Taiwan's Climate Pledges Greenwashing Failures and Not in Compliance with UN Standards?](#)

- Res Ipsa Loquitur: The facts speak for themselves
 - Simple Arithmetic
 - Count the MWs
 - Count the Dollars
 - DPP Government engages in Fantasy and Greenwash.
- 

Why is the Minority DPP Forcing the Government/Society to Shut Down Nuclear Power?

- ▶ Why is the DPP engaged in an irrational, suicidal crusade against nuclear power in Taiwan, the only baseload, scalable, zero-carbon energy source?
- ▶ For the last 40 years, has spent nuclear fuel (“SNF”) management been handled in accordance with global SOP for SNF disposal?
- ▶ The SNF management in Taiwan leaves the nuclear power plants (“NPPs”) prematurely (40 years) inoperable (instead of NPPs’ normal life of 80 years).
- ▶ The solution for SNF is known worldwide and commercially available both above ground and deep storage. There are technical solutions commercially available worldwide; why not in Taiwan?

See: [Taiwan’s Spent Nuclear Fuel Safety Crisis: Will The Taiwan Government Provide Real Solutions to Taiwan’s People/Businesses/Society?](#)

- ▶ Independent, Professional Engineering Audits must be conducted to check:
 - ▶ When and how was the budget for SNF management spent, especially dry casks?
 - ▶ Has SNF disposal been carried out in accordance to the accepted global SOP?
 - ▶ Has the government not retained SNF professionals with proven track records to manage the proper disposal of SNF on an ongoing basis for the last 40 years?
 - ▶ Why are the current reactor domes and SNF pools full? Why were dry casks not bought on an ongoing FIFO basis to decongest the NPP domes and pools?
 - ▶ What happened to 40 years of budgeted funds for the dry casks?
 - ▶ Why is the government talking about building a deep storage for SNF in Taiwan? How is this possible given Taiwan is fully faulted and lacks bentonite clay? It is completely irresponsible and contradicts globally known science.
 - ▶ Will the DPP use its own anti-nuclear policy to prevent an independent audit/investigation into the 40 years of SNF management practices?
-

Why is the Minority DPP Forcing the Government/Society to Shut Down Nuclear Power?

- Opposing nuclear energy is a DPP policy, not a national policy¹
- “Government critics regard one current policy as needless self-harm: the pledge to shut down Taiwan’s remaining nuclear reactor by next year and achieve a “nuclear free homeland.” It is a pledge made by the current ruling party, the Democratic People’s Party (DPP) and, as the deadline approaches, it is a policy increasingly being questioned”²
 - Isabel Hilton
- “There is a debate going on in our parliament, because the public has demanded a reduction of nuclear power and also a reduction in carbon emissions.”²
 - Stephen Wu, Deputy Director General, Taiwan’s Energy Administration
- This statement by the Deputy Director General is an outright lie.
- 2018 referendum: 59% of voters want nuclear energy.
- Why is the DPP forcing the government to shut down nuclear power against the will of the people?
- Why is the DPP going against the global trend of decarbonizing and expanding nuclear energy?
- Why is the DPP imposing its own party policy on the people of Taiwan?

Source: DPP Party Platform: https://www.dpp.org.tw/en/upload/download/Party_Platform.pdf

Source: Isabel Hilton, Why Taiwan and Its Tech Industry Are Facing an Energy Crisis: <https://e360.yale.edu/features/taiwan-energy-dilemma>

How is This Best Business Judgment to Leave So Many Benefits for Taiwan's People on the Table? Is This Responsible? Good Governance? Intelligent? Negligent? Corrupt?

How can the DPP government justify failure to avoid 1.7 billion tons of CO2 (332 million cars), failure to generate 1,787,040 GWh of power and USD411 billion dollars in revenue for the next 40 years? Is this the best business judgement?

See: [Taiwan's Spent Nuclear Fuel Safety Crisis: Will the Taiwan Government Provide Real Solutions to Taiwan's People/Businesses/Society?](#)

CO2 Emissions Avoidance

	Tons of CO2 Avoided	Cars Eliminated Equivalent
1 Year of Operation (5.1GW)	44,000,000	~8.3 million
40 Years of Operation	1,760,000,000	~332 million

Increased Government Revenue with Zero-Carbon Energy Generation

	Electricity Generated	Possible Revenue with Current IPP PPA Price for Zero-Carbon Energy USD230
1 Year of Operation (5.1GW)	44,676 GWh	USD10.2 billion
40 Years of Operation	1,787,040 GWh	USD411 billion*

*if continued, would reduce supply chain migration and economic hollowing out. Keeps jobs, revenue and taxes for Taiwan.

All Large Industrial Players/Manufacturers/Supply Chains Know That The Looming 2025 Power Crunch Is Caused By The DPP Government's Failure To Supply Enough (1) Dirty, Fossil Energy, and (2) Zero-Carbon Energy:



Energy Security and Resiliency:

- ***“Arguably, the most important lesson for Taiwan from the war in Ukraine is that it is folly to rely on imports to meet energy needs. Taiwan's ultimate goal should therefore be to achieve a high degree of energy security. And to do this, there is no alternative to the mass deployment of renewable energy and storage.”***- European Chamber of Commerce in Taiwan (“ECCT”)- Duncan Levine¹
- ***“AmCham's members are increasingly worried about the Taiwan government's ability to ensure energy security and grid resilience while pushing for a transition to renewables”***- AmCham, Andrea Wu, Vice Chairperson²
- ***“Wind and solar power are both weather dependent, which make the supply unstable. To meet rapidly rising demand, more baseload capacity and delays in the decommissioning of power plants may be required,”*** –Citi Group Report³

Source: 1. Falling short on climate action <https://euroview.ecct.com.tw/category-inside.php?id=1144>

2. AmCham urges Taiwan to address energy, talent, border control issues: <https://ocacnews.net/article/313218>

3. TSMC Leads Rush for Renewables Ahead of Taiwan Energy Vote

<https://www.bloomberg.com/news/articles/2021-12-08/tsmc-leads-rush-for-renewables-ahead-of-taiwan-energy-vote?embedded-checkout=true>

Nuclear Energy Is The Only Baseload, Scalable, Zero-Carbon Source of Energy That Taiwan Can Use To Completely Decarbonize and Complete Energy Transition:



- **Advised the government to accept the nation faces a power shortage and reconsider the use of nuclear power instead of pursuing its "nuclear-free homeland" project at any cost.** – Chinese National Association of Industry and Commerce (“CNAIC”) Lin Por-Fong (林伯豐), Chairman
- ***“The CNFI plays an important role in communicating industry concerns with the government” we will promote, energy conservation, decarbonization, call for the extension of existing nuclear power plants and for the development of new nuclear power plants”***- Chinese National Federation of Industries (“CNFI”) Matthew Miao- Chairman

Source:1. Taiwan's power supply system unable to withstand minor errors: expert:

http://www.besland.com.tw/portal_x1_page.php?cnt_id=157&search_type=1

2. CNFI calls for gov't action to bolster Taiwan's global competitiveness: <https://focustaiwan.tw/business/202308080031>

The Taiwan Government Fails on Resilience and Sustainability¹

- “No problem [is] more vexing to the DPP than Taiwan’s energy situation which is precarious...best estimates suggest that Taiwan’s strategic energy stockpiles contain only enough natural gas to last 11 days and enough coal to last 39 days.
- Even though Taipei acknowledges these vulnerabilities, solutions are in short supply. Just a few decades ago nuclear accounted for half of Taiwan’s electricity consumption. In 2016 the DPP pledged to phase out nuclear energy. If Lai fulfills the promises of his predecessor, the island’s final two reactors will go offline by next year.”
- Why does the Taiwan government continue to ignore the potential existential problem?

The Taiwan Government Fails on Resilience and Sustainability¹

- The Taiwan Government has failed catastrophically to supply enough zero-carbon energy to Taiwan's existing businesses and supply chains
- The following slides summarize the Taiwan's government failures on:
 - ▶ (1) Nuclear
 - ▶ (2) Wind
 - ▶ (3) Solar
- **Nuclear:** The Taiwan Government is shutting down nuclear power plants in 2025, the only scalable zero-carbon energy source.
 - Despite the results of the November 2018 referendum, showing 59% of citizens voted against the government's policy to phase out the use of nuclear energy by 2025, the minority ruling party has been engaged in an undemocratic anti-nuke campaign.
 - DPP's policy to impose its minority party anti-nuke policy on the government and society is undemocratic, anti-green, unscientific, scientifically outdated and anti-progress. It undermines Taiwan's resilience and sustainability. Opposing nuclear energy is a DPP policy, not a national policy¹
 - 55+ Jurisdictions around the world are expanding nuclear energy capacity. Why is Taiwan the only jurisdiction shutting down nuclear energy?
 - It is economic and climate suicide:
 - Entire Taiwanese industry supply chains will mass migrate to green energy jurisdictions.
 - Taiwan loses ability to export to developed markets.
 - 52% of export dependent GDP will suffer.
 - The economy will hollow out and jobs, revenue and tax revenue will be exported.

The Taiwan Government Fails on Resilience and Sustainability

- **Wind:** Energy investors are leaving Taiwan because the DPP government has implemented regulatory obstructions to local and foreign investment:
 - Many international wind power developers have invested and lost millions of USD in delayed or failed projects and will be seeking monetary damages
 - International Developers have migrated to other Asian Jurisdictions.
 - The EU has officially requested WTO dispute settlement consultations concerning Taiwan's requirement for wind power developers to use a percentage of local components
 - The government requirements for non-existent "Made in Taiwan" components for offshore wind turbines (~70%) undermine normal, open market competition and have made wind power implementation impossible to meet.
 - International developers are forced to forgo proven international market components and to buy components that do not exist in Taiwan.
 - Inexperienced local manufacturers are unable to supply adequate quality components in a cost-effective way.
 - Taipower's feed-in-tariff prices are too low for energy investors.

The Taiwan Government Fails on Resilience and Sustainability

- **Solar:** Taiwan is too small and land is too expensive to effectively develop solar energy:
 - The government has failed to implement a concrete plan to successfully develop solar energy with storage and connect it to the grid.
 - Taiwan's economy heavily relies on manufacturing, which demands a stable and continuous power supply that solar energy alone may not consistently provide.
 - Taiwan lacks advanced energy storage systems to manage the intermittency of solar energy.
 - The development of solar farms competes with agricultural land and other critical land uses.
 - Taiwan's mountainous terrain and high population density limit the available land for large-scale solar farms.
-

Can the DPP Government be Trusted To Tell the Truth Given The Track Record?

- The Taiwan Government promised renewables will account for 15% of Taiwan's energy generation in 2025, 20% in 2027 and 60%-70% by 2050.¹
- Can the Taiwan Government be trusted to achieve large, long-term goals when its short term goals have failed catastrophically? [See: [Taiwan Government's Greenwash](#)]
- Are the Taiwan Government's zero-carbon energy promises all greenwashing fictions?
- The best that the Taiwan Government can do is achieve 20% renewable energy by 2027; this is far below the UN goal of reducing emissions at least 43% by 2030.

Year	Renewable Energy Generation % Promise	% Increase from 2024
2023	7%	-
2025	15%	114%
2027	20%	185%
2050	70%	900%

- If Taiwan's government cannot deliver a 114% increase to 15% and 185% increase to 20% renewable energy then:
- How can Taiwan achieve a 900% increase in renewable energy from today's levels to meet the 2050 goal of 70%?

Artificial Intelligence vs Natural Stupidity

- **Nvidia plans in Taiwan**

- **2 supercomputer centers**
- **A New HQ in Taiwan (Nvidia has nearly 100 suppliers in Taiwan)¹**
- **Nvidia leadership is concerned as Taiwan's zero-carbon energy supply is insufficient for the company's planned facilities.²**
- **"The volume of energy that Nvidia requested is astonishing. Even if all Taiwanese green energy providers sold their electricity to Nvidia, it still would not be enough"- Chang Chien-Wei (張建偉) J&V Energy Spokesperson²**
- **"Artificial General Intelligence (AGI) will drive massive power demand, amounting to trillions of USD, to support the rollout of hundreds of millions of GPUs. This intense techno-capital acceleration will mobilize power growth demand by multiples of 10%."³**
- **"It is impossible to win the AI race without nuclear [energy]"⁴**

- Jensen Huang, Interview by the Bipartisan Policy Center, Washington D.C. September 27, 2024



Nvidia CEO Jensen Huang

Source: 1. Nvidia to build second computer supercomputer center in Taiwan

<https://www.taiwannews.com.tw/news/5883818>

2. Nvidia Seeks Renewable Energy Sources for Planned Taiwan Facility <https://www.taiwanplus.com/news/taiwan-news/powering-taiwan/2406210257/nvidia-seeks-renewable-energy-sources-for-planned-taiwan-facility>

3. SITUATIONAL AWARENESS: The Decade Ahead <https://situational-awareness.ai/>

4. Bipartisan Policy Center Jensen Huang Interview: <https://bipartisanpolicy.org/event/a-conversation-with-nvidia-ceo-jensen-huang-the-future-of-ai-and-energy/>

Artificial Intelligence vs Natural Stupidity

Concerns over Taiwan's ability to provide a stable electricity supply are mounting¹

- *“Concerns over potential power shortages and the deterioration of power quality and reliability could pose operational risks for the semiconductor industry”*

- Chen Jong-Shun of Chung-Hua Institution for Economic Research.

- *“Taiwan has both an energy crunch and, even more importantly, an electricity crunch”*

-Joseph Webster, senior fellow at the Atlantic Council's Global Energy Center

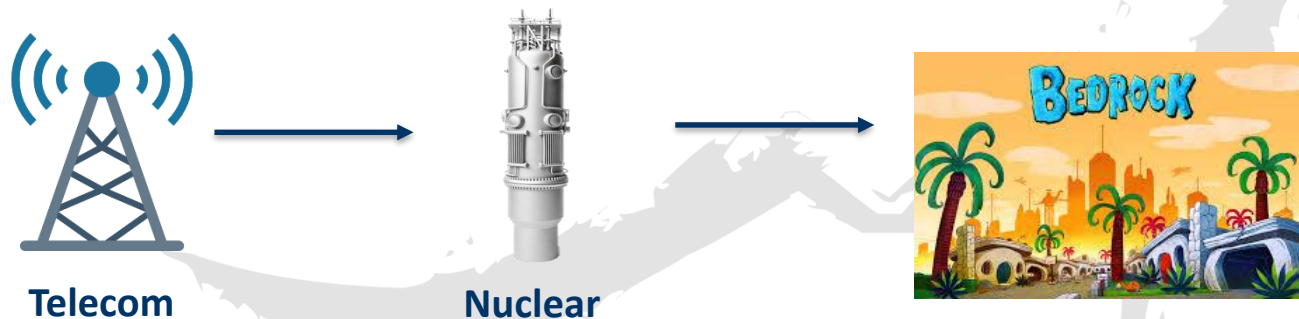
Artificial Intelligence vs Natural Stupidity

Pegatron Chairman Tung Tzu-Hsien calls on the government to solve the energy crisis they have created¹:

- ***“Taiwan’s energy mix should be 30 percent renewable energy and 30 percent nuclear power to support the AI and tech sectors”***- Pegatron Chairman Tung Tzu-Hsien (童子賢)
- ***“Taiwan’s energy policy has been stuck by the “no-nuclear homeland” policy”*** -Pegatron Chairman Tung Tzu-Hsien (童子賢)
- ***“In the same way mobile phone technology has greatly advanced, nuclear technology will further develop to take up less space, generate power more efficiently and be safer. Energy policy should be discussed with less politics and more focus on the needs of the industry and households”*** - Pegatron Chairman Tung Tzu-Hsien (童子賢)



Pegatron Chairman Tung Tzu-Hsien



“Bedrock, it’s a page right out of history”
- Hanna Barbera

Can the DPP Government be Trusted To Tell the Truth Given Their Catastrophic Track Record?



“Taiwan’s government thinks there’s enough electricity [in 2025]. All we can do is believe them.”

- Mark Liu TSMC Chairman AGM 2023¹

Taiwan's Government Lacks the Ability to Generate Enough Energy (Dirty Fossil Fuel/Zero-Emissions) To Maintain/Grow Taiwan's Technological Leadership, Let Alone Become a Global Leader in AI and New Industries



Where is the Beef?

DPP Government Talk vs Reality: Boiling Planet, Not Enough Energy (Fossil/Zero-Carbon), No Decarbonization and Energy Transition for Taiwan



“Follow the leaders” Image by: Isaac Cordal
Berlin, Germany, April 2011.

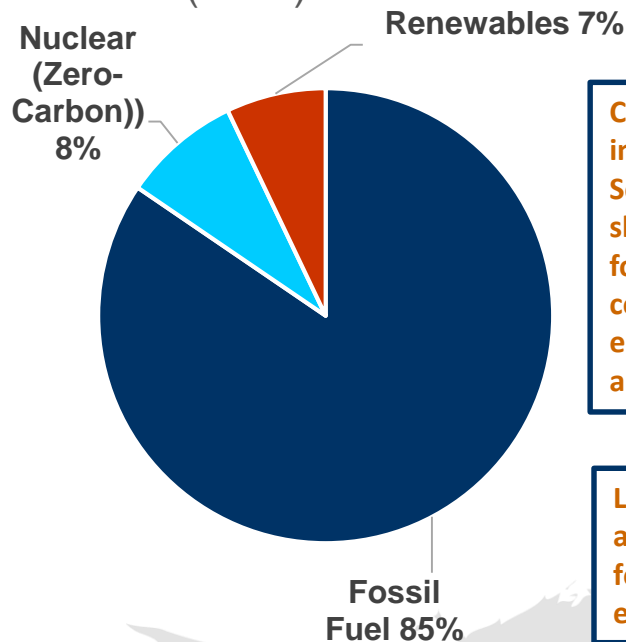


“The Era of Global Warming has Ended and the Era of
Global Boiling Has Arrived”
- UN Secretary General Antonio Guterres

Taiwan Mission Impossible

- The DPP Government has no way to achieve decarbonization and energy transition
- The math does not work
- The DPP Government's greenwash does not work

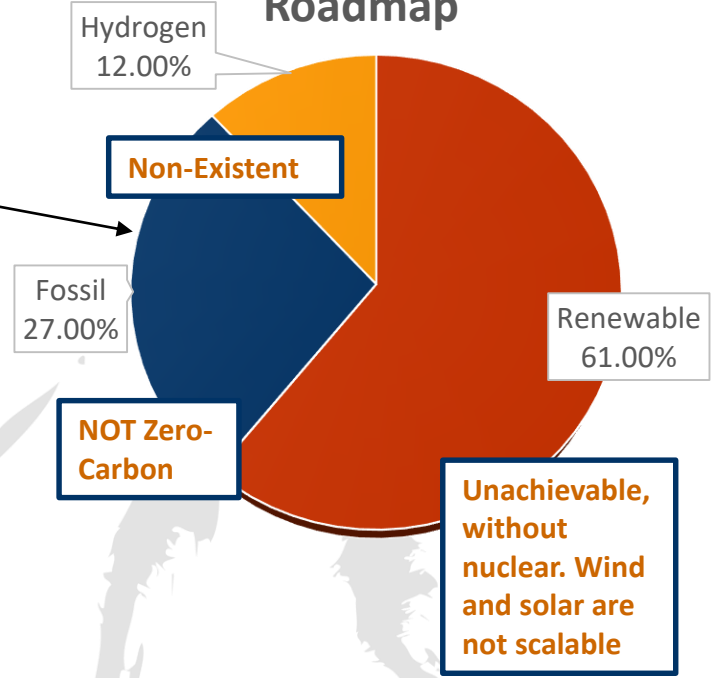
Taiwan's Current Energy Reality (2024)



Cornell study published in the Journal of Energy, Science and Engineering shows LNG has a carbon footprint 33% larger than coal due to associated emissions from extraction and shipping¹.

LNG is still a fossil fuel and it is not a solution for decarbonization and energy transition

Electricity Generation in 2050 According to Taiwan Government's "Carbon Neutral" Roadmap



Journal of Energy Science and Engineering: The greenhouse gas footprint of liquefied natural gas (LNG) exported from the United States: by Cornell Professor Robert W. Howarth (peer-reviewed and publicly backed by over 100 scientists)
<https://scijournals.onlinelibrary.wiley.com/doi/10.1002/ese3.1934>

Due to the DPP Government's Catastrophic Failure to Deliver Decarbonization and Energy Transition: Taiwan Businesses Have 3 Choices

In the face of stricter global decarbonization regulations, evolving market access requirements and consumer driven supply chain preferences, Taiwan Businesses (Enterprises, Supply Chains and Group Companies) have three choices:

1. Transform Their Current Jurisdiction to Significantly Increase Zero-Carbon Energy Supply. This Is mission impossible for the Taiwan Government

This involves:

- ▶ Cause societal changes that actually deliver sufficient zero-carbon energy to meet current and future growth needs.
- ▶ Replace all fossil fuels with baseload, scalable zero-carbon energy. Greenwash (pay-to-pollute schemes) and governmental public relations doesn't replace fossil with green energy. Period.
- ▶ Ensure the incorporation of sufficient clean energy for their own operations (and their entire supply chains).

2. Close Down: Make plans to Scale Down or Exit Operations That Can't Meet Zero-Carbon Requirements (This Taiwan CXO Team has not been born yet!):

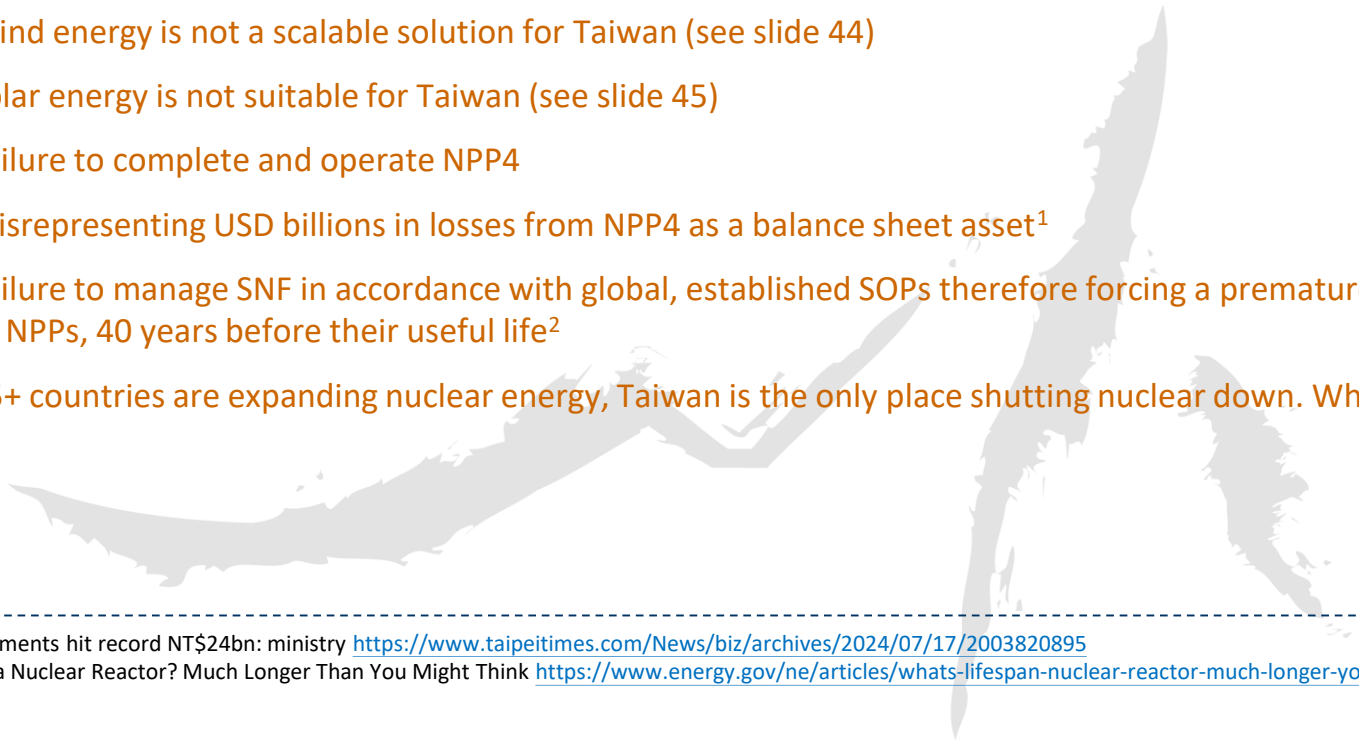
- ▶ Make a rational plan to closedown, restructure, re-engineer or implement a bankruptcy process for operations that are unable to meet zero-carbon requirements
- ▶ Plan for the loss of competitiveness and ability to export to zero-carbon markets (phase out)

3. Execute a Successful Shift: Geographical Repositioning to Survive and Maintain Resilience and Sustainability:

- ▶ If options 1 and 2 are not acceptable
- ▶ Migrate (Shift) to a zero-carbon manufacturing jurisdictions, AND
- ▶ Transform the operation to global, best practice compliance Zero-carbon systems and standards to properly measure, monitor and report on all sustainability criteria so they can operate anywhere and everywhere

The Taiwan Government has Failed to Deliver on its Climate Promises

- **Taiwan Government Failures:**
- **Companies have started to mass migrate and this will lead to a hollowing out of the economy. Outbound investment increased 170% from 2023 to 2024¹**
 - ▶ Not enough energy (fossil/zero-carbon)
 - ▶ Not enough energy to support current societal needs let alone future growth and power for new industries
 - ▶ No satisfactory concrete plans to deliver decarbonization and energy transition
 - ▶ Government has pushed energy investors out of Taiwan
 - ▶ Wind energy is not a scalable solution for Taiwan (see slide 44)
 - ▶ Solar energy is not suitable for Taiwan (see slide 45)
 - ▶ Failure to complete and operate NPP4
 - ▶ Misrepresenting USD billions in losses from NPP4 as a balance sheet asset¹
 - ▶ Failure to manage SNF in accordance with global, established SOPs therefore forcing a premature closure of NPPs, 40 years before their useful life²
 - ▶ 55+ countries are expanding nuclear energy, Taiwan is the only place shutting nuclear down. Why?



Taiwan's Mission Impossible: This is the Hard Reality, the Hard Truth

- The DPP Government's current path is clear:



Taiwan's Mission Impossible - The Sequel (If There is to be One): What are the Next Steps to be Taken?

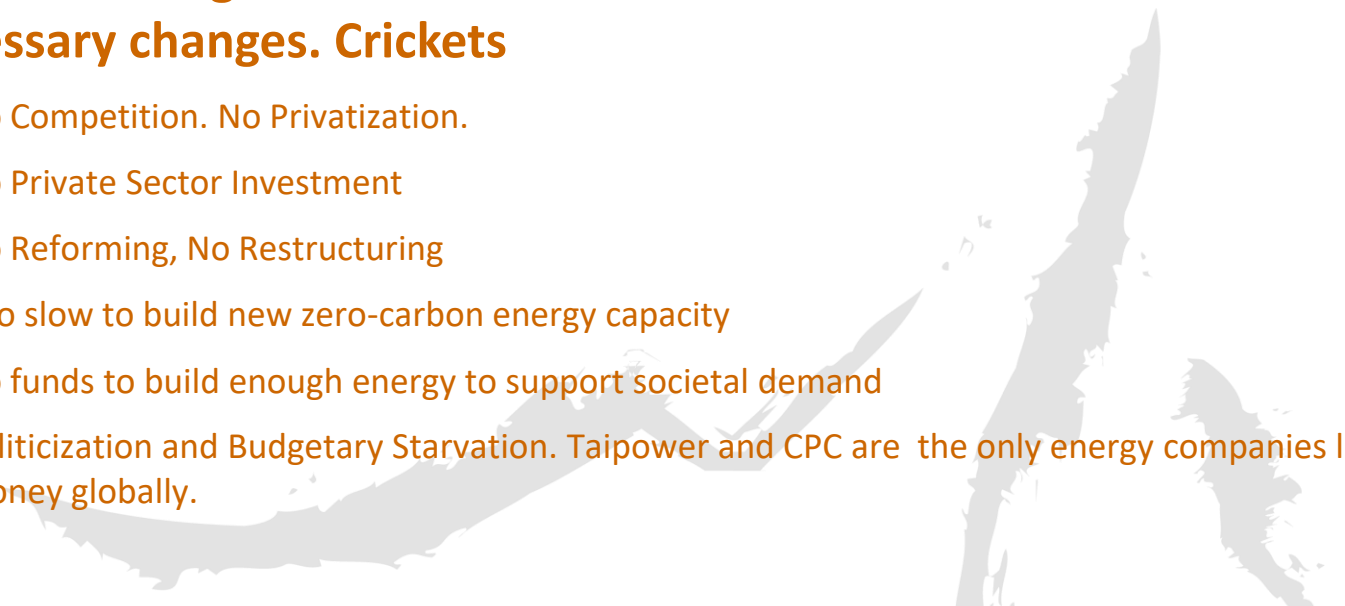
How Can Taiwan Avoid Certain Demise (The Numbers Don't Lie)? To Survive, Taiwan Needs Radical Change

- Taiwan must decarbonize and complete the energy transition.
- Taiwan must replace all fossil fuels with zero-carbon energy sources to achieve energy transition, decarbonization and the net-zero emissions goal.
- Pay-to-pollute greenwash is not an option
- Taiwan must coordinate a results-driven whole of government and a whole of society effort to develop, plan and implement a concrete market shaping plan (with a schedule, performance milestones and funding).



The Tortoise Trainer by Osman Hamdi (1096): Hamdi's painting of an anachronistic historical character attempting to train tortoises is usually interpreted as a satire on the slow and ineffective attempts at reforming the Ottoman Empire¹.

Taipower is Incapable of Delivering Decarbonization and Energy Transition

- **The Government has failed to create an open energy market with competition and choices other than the state monopoly**
 - **State owned enterprises lack the ability to improve efficiency or innovate to meet the challenges**
 - **Taipower recognizes this and has called on the Government to make the necessary changes. Crickets**
 - ▶ No Competition. No Privatization.
 - ▶ No Private Sector Investment
 - ▶ No Reforming, No Restructuring
 - ▶ Too slow to build new zero-carbon energy capacity
 - ▶ No funds to build enough energy to support societal demand
 - ▶ Politicization and Budgetary Starvation. Taipower and CPC are the only energy companies losing money globally.
- 

Taipower is Incapable of Delivering Decarbonization and Energy Transition

- Taipower calls for *“an efficient energy market, new technologies and investment for the development of renewable energy”*-Taipower Chairman Tseng Wen-sheng (曾文生)¹
- *“Taipower hopes to open green energy to all companies, but it cannot fulfill specific demand from SMEs”*-Eric Yang, Sunny Founder, Manager²

Taiwan Must Create A New Regulatory Reality:

- To Facilitate and Support Foreign and Domestic Investment Into IPPs

**-To Attract and Retain All Corporate, Strategic, Financial, Technology Partners and Institutional Investors
To Successfully Compete for and Retain Foreign Investment for The Energy Transition**

Taiwan Needs/Goals:

- **Decarbonize and Achieve Energy Transition.**
- **Provide Zero-Carbon Energy for All Current and Future Societal Demands.**
- **Allow and incentivize the private sector to aid in the energy transition without improper government interference, conflicts of interest, management and governance weaknesses and free-market barriers.**



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Barriers in Taiwan

- Energy Investors won't come and supply chains are leaving
 - Taiwan Government restricts foreign investment in nuclear energy IPPs (50% government owned).
 - ▶ Government has no money to fund its 50% share.
 - ▶ Foreign investors will not co-invest with the Taiwan government as 50% shareholder given the widely held view that the Taiwan Government is untrustworthy given NPP4s double failure.
 - ▶ NPP 4 is an infamous global example of government ineptitude, mismanagement and an untrustworthy government; this is reinforced by the Taiwan Government's hostility to public-private energy cooperators as it forces foreign investors and operators of wind energy to purchase "Made in Taiwan" components that do not exist. As a result, they are leaving Taiwan
- ▶ Taiwan's government failure to change the laws to allow 100% private sector investment in nuclear IPPs will be recorded as the final nail in the coffin for Taiwan's collapse

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Barriers in Taiwan

- An ineffective regulatory environment has resulted in losing trillions of dollars in investment and job creation for Taiwan.
- Mass migration of supply chains out of Taiwan and hollowing out of the economy. Over each of the last five years, Taiwan saw a 15% annual rise in outbound investment
Outbound investment increased 170% from 2023 to 2024.

See: [Taiwan's Global Supply Chains](#)

- The Taiwan government has failed to retain foreign investors for the energy transition.
 - The Taiwan Government undermines normal, open market competition.
 - Taiwan Government policies cause delays, supply chain disruption, additional costs and are driving large scale market withdrawals.
 - The Taiwan Government policies have forced foreign investor departures to other markets.
 - Those who oppose decarbonization and energy transition stand in the way of Taiwan's security, resilience, sustainability and future.
-

The Technical Solution Exists: Why is the Global Solution Being Rejected by the Taiwan Government?

Fifty Plus Jurisdictions are Expanding Nuclear Energy as the Only Baseload, Scalable, Zero-Emissions Energy Source

- **Taiwan Needs Radical Change**
- **The World and the Market Have Rejected Taiwan's Current Path to Certain Demise (The Numbers Don't Lie)**
- **The World and the Market are Moving to Adopt Small Modular Reactors ("SMRs") to Achieve Decarbonization and Energy Transition**
 - ▶ The only scalable, baseload, zero-carbon source of energy.
 - ▶ Scalable solution to achieve decarbonization and the global requirement to complete energy transition.
 - ▶ SMRs contribute to reducing reliance on fossil fuels.
 - ▶ Safe, low-risk with improved designs and safety measures. Can't leak and can't be weaponized.
 - ▶ SMRs ensure baseload energy needs and eliminates interruptions. Ensure societal energy growth needs.
 - ▶ SMRs can be coupled with desalination facilities for fresh water
 - ▶ Google's CEO, Sundar Pichai said the company is actively looking at nuclear energy, especially Small Modular Reactors ("SMRs") to meet increasing energy demand for AI data centers and achieve net-zero across its operations by 2030¹.



1. Google Eyes Nuclear Energy to Power AI Data Centers: <https://w.media/google-eyes-nuclear-energy-to-power-ai-data-centers/>

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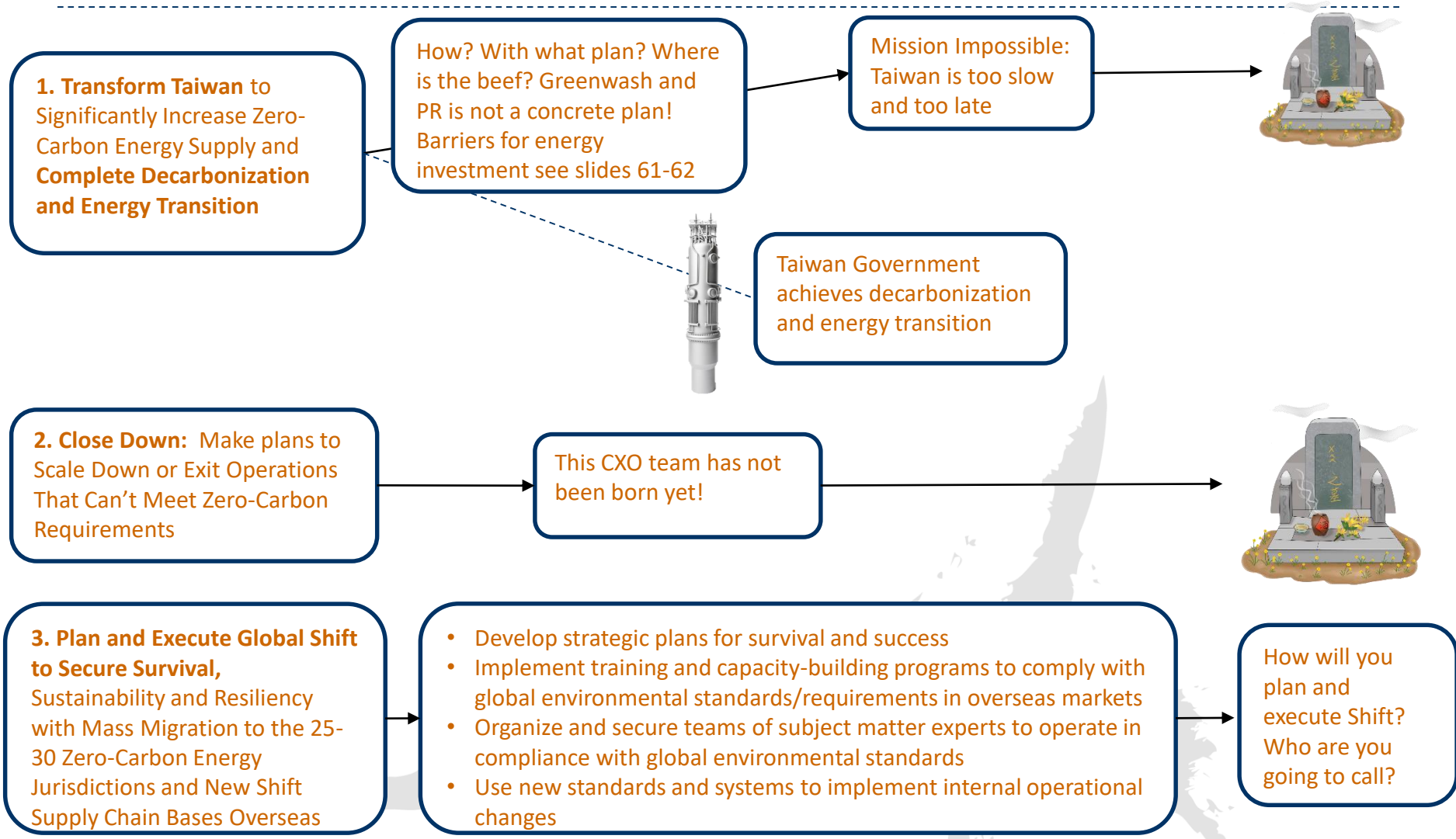
- According to Peter Kurz, Taiwan's energy dilemma requires an imaginative leap
- One solution, he believes, lies in small modular nuclear reactors that could even be moored offshore and linked with undersea cables. It is a solution that he believes the Taiwan's ruling party might come around to.



Peter Kurz, Quantum International Corp (“QIC”), Chief Strategy Officer. Also known as “Mr. Taiwan”



Taiwan Businesses and Supply Chains Only Have 3 Choices





**“The intelligent win
before they fight. The
ignorant fight to win.”**

**-Zhu Geliang
Chinese Strategist**



The Next Generation Asks



- **As a business and supply chain what is your strategy and what is your implementable actionable plan?**
- What are you doing to create real actionable solutions (Now!) to reverse Taiwan's Catastrophe?
- What are doing to implement decarbonization and energy transition (Now!)?
- How do you explain to the next generation why you refused to act to save Taiwan (Now!)?
- How do you explain to the next generation why you refused to mitigate the Climate Catastrophe (Now!) (conclusion of over 150,000 scientists)?
- The world is in the 6th mass extinction. Whiskey Tango Foxtrot Taiwan Government!

Taiwan Businesses and Supply Chains:
What Are you Going to Do? Who Are you
Going to Call to Complete the **Shift?**



For More Information

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