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The Process and Annual Review Report of Taiwan Energy Transition White Paper



Presenter

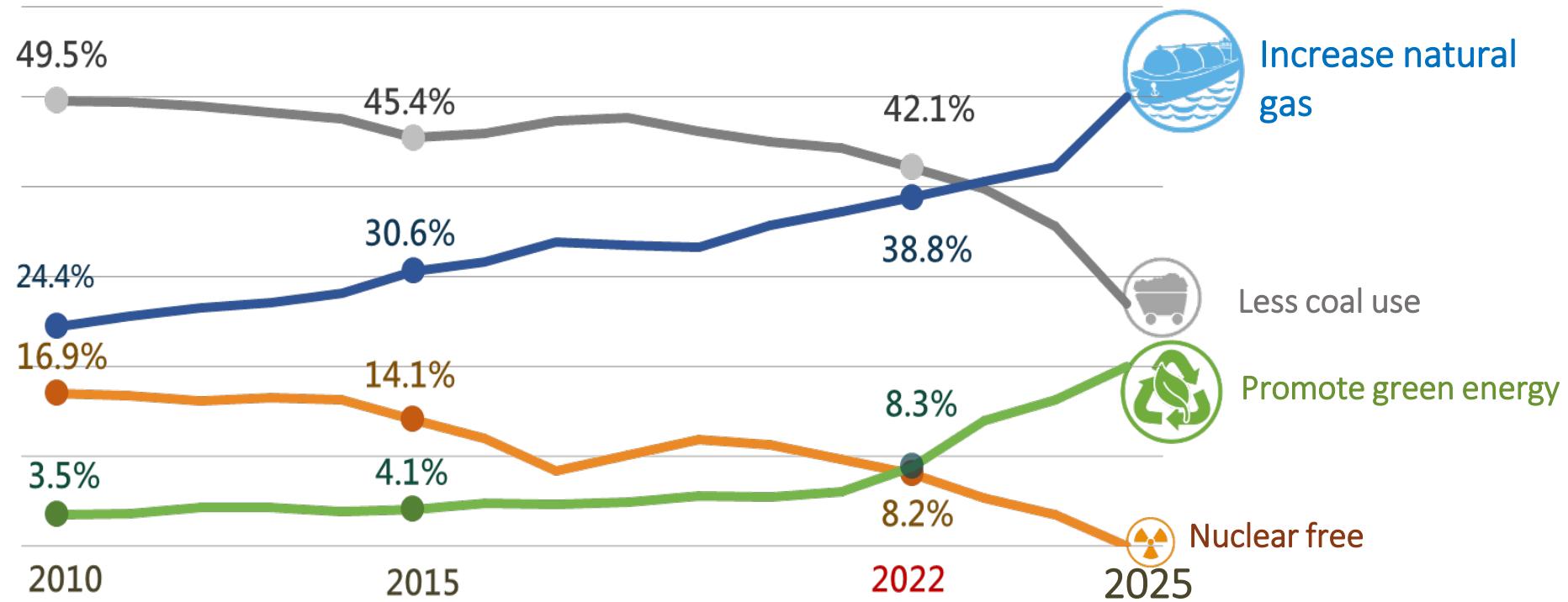
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Background



Power Stability



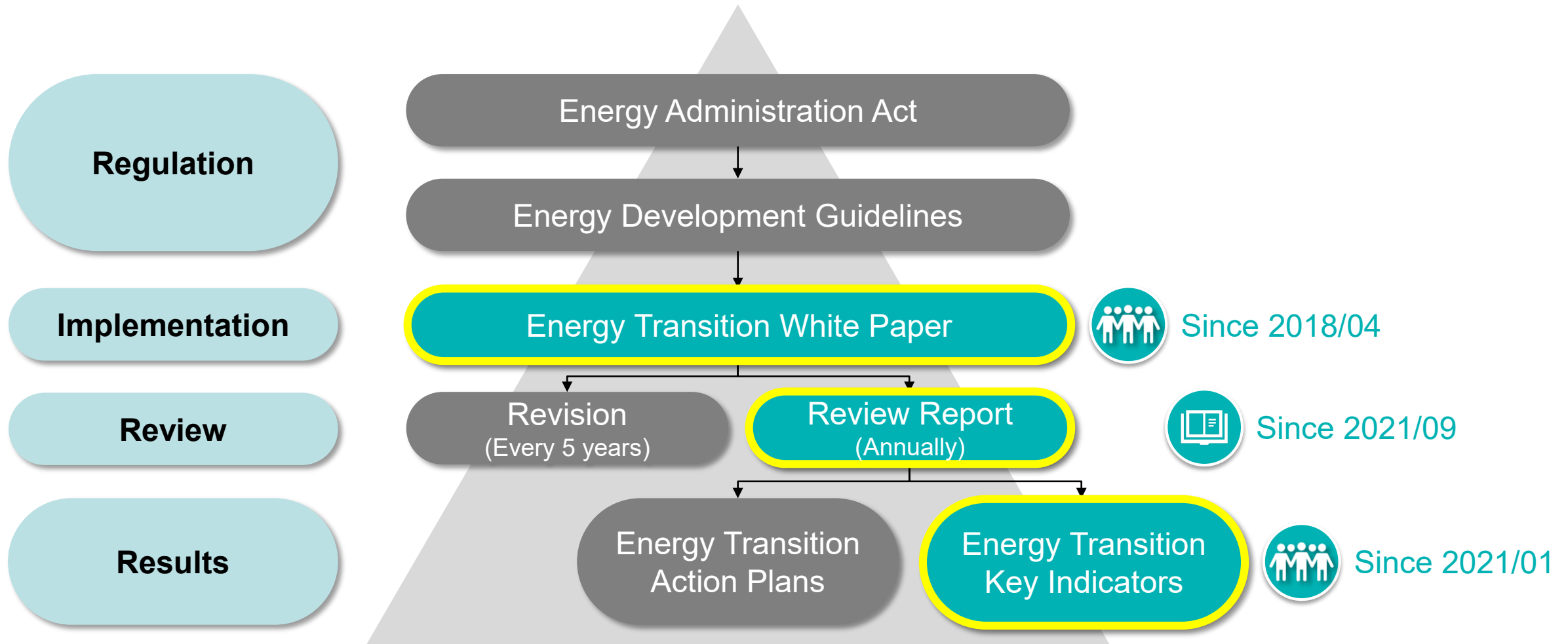
Energy Independency



Carbon Reduction

Why is Energy Transition White Paper Important?

First policy completed with collaboration between the government and the civil society



Drafting Procedure of White Paper

2000+ participants

1400 opinions

13 months



20 Key Programs

energywhitepaper.tw/#/



Energy
Governance

1. Local energy governance assistance program
2. Establishing mechanisms on participatory energy governance program
3. Energy transition responsibility program



Energy
Conservation

4. Domestic sector energy conservation program
5. Industrial sector energy conservation program
6. Building sector energy conservation program
7. Transportation sector energy conservation program
8. Energy conservation and pathway development program



Electricity

9. Securing electricity supply program
10. Electricity market reform advocacy program
11. Smart grid program
12. Expansion and securing of natural gas supply program
13. Community power advocacy program



Renewable
Energy

14. Solar energy program
15. Wind energy program
16. Geothermal and other renewables program
17. Measures on advocacy of new and renewable energy advocacy program

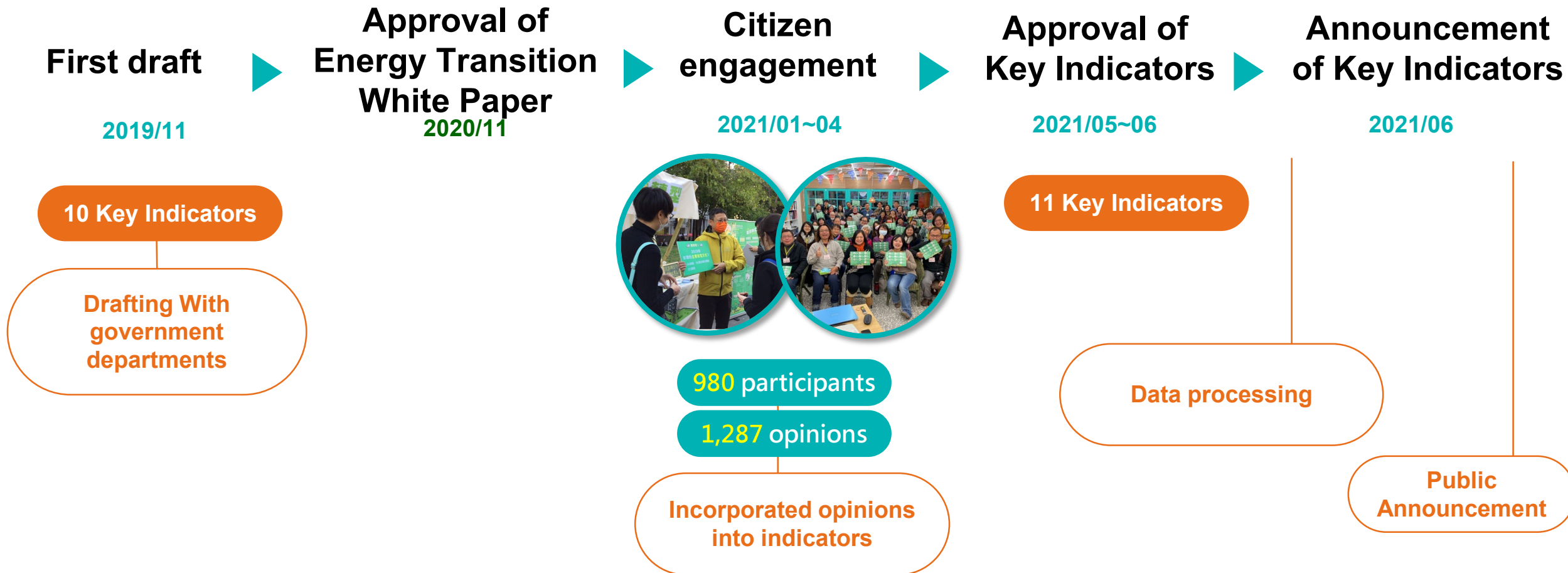


Green Energy
Industry

18. Renewable energy industry promotion program
19. Phase II of the National Energy Program
20. Green Energy Technology Joint Research Center and pilot zone in Shalun Green Energy Science City

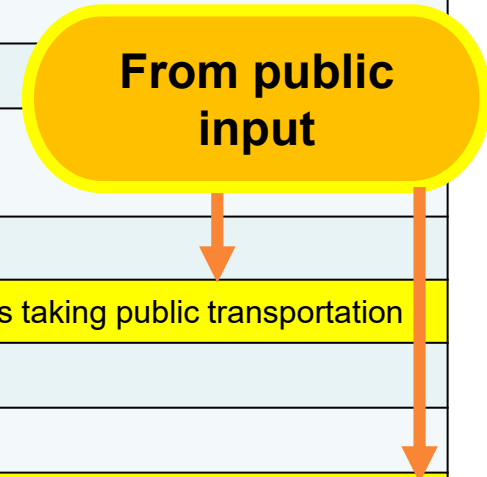
Timeline of Energy Transition Key Indicators

- Indicators designed to measure the progress of energy transition.
- Public awareness-raising



11 Key Indicators

| NO. | Indicator | Definition |
|-----|--|---|
| 1 | Reduce energy import rate | Ratio of imported energy to total domestic energy supply |
| 2 | Increase energy supply sufficiency margin | Ratio of days with energy supply sufficiency margin indicator in a year |
| 3 | Improve energy conservation effectiveness | Industrial energy intensity: Total energy consumption required by industry per unit of real GDP |
| | | Service sector energy intensity: Total energy consumption required by the service sector per unit of real GDP |
| | | Average power consumption per household: Average power consumption per household per year |
| 4 | Promotion of renewable energy development | Total domestic installed capacity of renewable energy |
| 5 | Promotion of the green economy | Total investment driven by the promotion of the green energy sector |
| | | Employment opportunities created by the promotion of the green energy sector |
| 6 | Reduce energy emission factors | Carbon emission per unit of power generated |
| 7 | Reduce overall air pollutant emission for the overall power system | Total air pollutant emission for the domestic energy sector |
| 8 | Increase the number of green vehicles | Increase the number of electric vehicles: ratio of electric vehicles to total vehicles |
| | | Passenger volume for public transportation: statistics on the volume of passengers taking public transportation |
| 9 | Reduce dependence on nuclear power | Total domestic installed capacity of nuclear power |
| 10 | Strengthen citizens' energy awareness | Citizens' energy awareness derived from their responses in energy policy surveys |
| 11 | Promote the installation of smart meters | Total domestic number of low-voltage smart meters |



Annual Review Report

- Tracks policy progress
- Review team from civil society providing feedback

Collaboration



10 Relevant
government
departments

Consultation



Task Force Members



Revise the content of
the report



Policy recommendations

Publication



Official Website

Disclose the energy transition
accomplishments of
the previous year

Results : What progress has been made?

● positive
 ● negative

| NO. | Indicator | 2016 | 2022 | Comparison |
|-----|--|------------------------------|-------------------------------|------------|
| 1 | Reduce energy import rate | 97.9% | 97.29% | |
| 2 | Increase energy supply sufficiency margin | 35% | 79% | |
| 3 | Improve energy conservation effectiveness | 4.11 LOE/103NT\$ | 3.14 LOE/103NT\$ | |
| | | 0.56 LOE/103NT\$ | 0.47 LOE/103NT\$ | |
| | | 3,636 KWh | 3,618 KWh | |
| 4 | Promotion of renewable energy development | 0.47 GW | 14.13 GW | |
| 5 | Promotion of the green economy | Billion NT\$ 14.2 | Billion NT\$ 159.19 | |
| | | 135 | 1,468 | |
| 6 | Reduce energy emission factors | 0.53 kgCO ₂ e/KWh | 0.493 kgCO ₂ e/kWh | |
| 7 | Reduce overall air pollutant emission for the overall power system | 11 Toe | 4.9 Toe | |
| 8 | Increase the number of green vehicles | 0.72% | 4.26% | |
| | | 23.1 Billion people | 17.3 Billion people | |
| 9 | Reduce dependence on nuclear power | 5,144 MW | 2,887 MW | |
| 10 | Strengthen citizens' energy awareness | N/A | 57.3% | |
| 11 | Promote the installation of smart meters | N/A | 2,108,000 | |



Conclusion

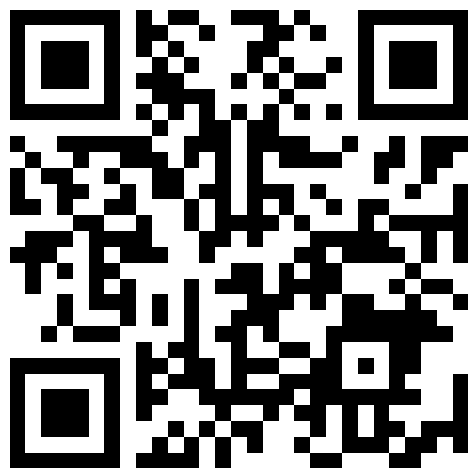
- Reflection:
 - What happens when the policy needs to be renewed? What public servants should do to response to the civil voices?
 - Policy evaluation were not covered in the design process & limitation of civil participation in the policy implementation improvements.
 - Comprehensive citizen engagement as the Energy Transition White Paper not yet seen in 2050 net zero policy design.
- Future work:
 - A robust mechanism for public engagement to brainstorm solutions.

More about us

- We welcome new collaboration opportunities!



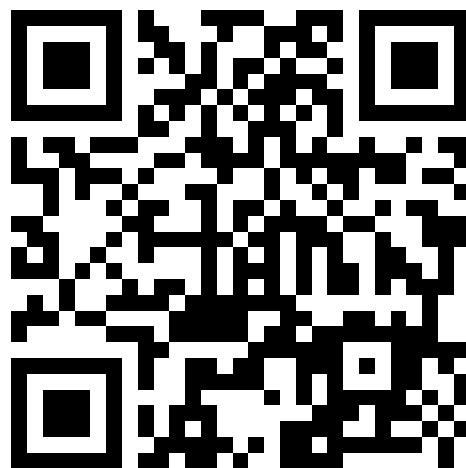
DenDoEnergy
Facebook Fan Page



<https://www.facebook.com/DENDoENergy>

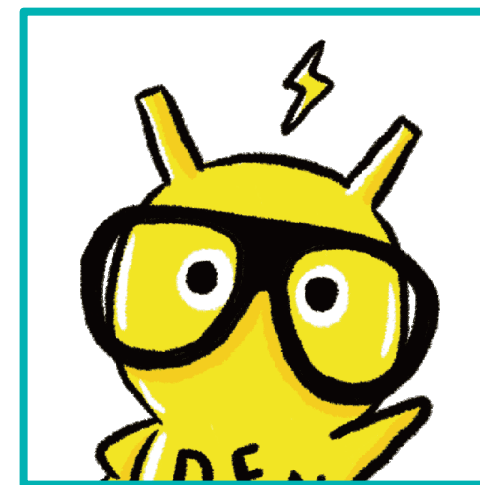


Energy Transition White Paper
Official Website



<https://energywhitepaper.tw/>

2050 Net Zero



Contact us



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THANK YOU FOR LISTENING

Q&A

Acknowledgements:

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Energy Transition Key Indicators Public Engagement Campaigns

980 participants

1,287 opinions

Pop-up stalls



Public Dotmocracy

Workshop



Community Colleges Network

Discussion with members of community colleges and environmentally conscious NGOs

Questionnaire



Official Website

- The most important
- The most unreasonable
- The most agreeable
- Post-it (opinions)

11 Key Indicators: Calculation method

| NO. | Indicator | Calculation method |
|-----|--|--|
| 1 | Reduce energy import rate | Imported energy/Total national energy supply (%) |
| 2 | Increase energy supply sufficiency margin | The number of days with sufficient power supply / the number of days in the year (%) |
| 3 | Improve energy conservation effectiveness | Industrial energy intensity (LOE/103NT\$) |
| | | Service energy intensity (LOE/103NT\$) |
| | | Electricity Consumption Per Households (KWh) |
| 4 | Promotion of renewable energy development | Renewable energy installation capacity (MW) |
| 5 | Promotion of the green economy | Green energy investment (Billion NT\$) |
| | | Green employment |
| 6 | Reduce energy emission factors | Electricity emission factor (kgCO ₂ e/KWh) |
| 7 | Reduce overall air pollutant emission for the overall power system | Air pollution from power system (Toe) |
| 8 | Increase the number of green vehicles | Number of electric vehicles/total vehicles (%) |
| | | Passengers in public transport (1,000,000 people) |
| 9 | Reduce dependence on nuclear power | Capacity of nuclear power plants (MW) |
| 10 | Strengthen citizens' energy awareness | The percentage of correct answers to the energy basic knowledge questions (%) |
| 11 | Promote the installation of smart meters | Number of low-voltage installed smart meters (Thousand) |