

Towards Realizing a Green Society

**Economic and Industrial Policy Bureau
Industrial Science and Technology Policy
and Environment Bureau
Agency for Natural Resources and Energy**

Basic Concept for Realizing a Carbon Neutral Society

- We will promote a “Carbon neutral and high value-added industrial structure” and “GX-based new industry creation”, bearing in mind the scale of the required transformation of our social system, infrastructure, and production processes to achieve carbon neutral energy, and the volume of investments and capital associated with that transformation.
 - Transforming the social system, infrastructure, and production processes requires enormous investment and capital. While IEA’s estimates call for a 4x increase in green investment by 2030, industrial competitiveness will be lost if we maintained the current industrial structure, especially for industries and business models that incur additional costs. We aim to realize **“Carbon neutral and high value-added industrial structure”** in our entire economy by not only focusing on existing efforts for cost reduction but also through differentiation and high value creation of products and pursuing business models and business structures that are carbon neutral and have a high markup.
 - **The policy responses that we consider shall not avoid the difficulties of the road to carbon neutrality and shall face the challenges squarely.** Furthermore, our policies shall ensure that our **long-term economic competitiveness and economic security** will not be lost as a result of pursuing the carbon neutrality and high-value creation of each company and industry.

(For example, our policy responses shall not generate significant consequences in value-adding of related supply chains, future innovation opportunities, and supply chain disruption, as a result of losing domestic industrial production bases.)
 - Also, we will take advantage of the opportunity of a huge GX-related market being established in the world, and secure competitiveness in not just the technology phase but also the implementation phase, and promote a **“GX-based new industry creation”** to realize economic growth in Japan.
- In order to realize such an industrial structure, we need a large transformation of industries and companies through public-private partnerships, such as large-scale investment, system reform, and human resource development. We shall consider necessary policy responses toward this goal.

Focusing on cost reduction only
Win through technology but lose
through implementation



Carbon Neutral and high Value-added industrial Structure
(+ long-term competitiveness, economic security)
GX-based new industry creation

Transformation of industry and company (Large-scale investment,
system reform, human resource development etc)

The Policy and Timeline for Realizing “Carbon Neutral and High Value-Added Industrial Structure” and “GX-based New Industry Creation”

- Reform of industries and companies through a new “public-private partnership” is necessary, including large-scale investment, system reform, and human resource development. We shall consider the following policy responses.
 - ① Policies for encouraging **bold investment** to achieve “GX-based new industry creation”
 - ② Policies for promoting **management reform** to achieve “Carbon Neutral and High Value-Added Industrial Structure”
 - ③ Way of **institutional system** for promoting necessary innovation and change in industrial structure for carbon neutrality

For example, in order to achieve significant innovation and change in industrial structure, collective actions by multiple companies may be necessary. **We shall consider measures within competition policy** from the perspective of realizing innovation and promoting change in industrial structure by business restructuring.

(Conceivable issues)

- We shall strictly cope with and correct agreements between companies which unfairly suppress innovation for carbon neutrality.
- We shall **strongly support** autonomous concerted efforts by multiple companies that contribute to change in industrial structure for carbon neutrality, such as aggregation of production facilities which significantly contribute to carbon neutrality and large-scale agreements between companies towards building a carbon neutral supply chain.
- ④ **Others : Industrial location policy for proceeding energy transition efficiently etc.**

The Policy for Encouraging Bold Investment to Achieve “GX-based New Industry Creation”

- We shall summarize **the definition of “Success” in each field**, as well as challenges and policy issues in technological, business, and market layers. We will look ahead from the **R&D phase to the business implementation phase and consider policies in each field, including specific policy tools such as standardization, intellectual property, international cooperation, human resource development, regulatory design, and trade policy.** Also, **it is important to increase predictability about the investment scale necessary to achieve GX.**
- Based on lessons from the past, **we shall consider large-scale, long-term, and well-planned support especially in the business implementation phase.**

GX example 1 : Ammonia

Growth Potential

- The market size of fuel ammonia global supply chain will rise to 760 million tons a year by 2050.

Challenges

- Building a cheap and abundant fuel ammonia supply chain market .

Policy Issues

- Technological Aspect: Support for development of new ammonia synthesis technology alternative to existing technology
- Business Aspect: International cooperation for manufacturing and supply, to lower the estimated supply cost
- Market Aspect: International cooperation for carbon neutrality by utilization of fuel ammonia

GX example 2 : Hydrogen

Growth Potential

- The size of international market is estimated to be 500 million tons a year.

Challenges

- Cost reduction by increasing size of supply chain and mass production

Policy Issues

- Technological Aspect: Support for implementation of Japanese element technology and strengthening industrial competitiveness
- Business Aspect: Financial support, actualization of non-fossil value
- Market Aspect: Reduction of manufacturing cost, and establishment of secure, flexible, and transparent international hydrogen market

GX example 3 : Offshore Wind

Growth Potential

- Estimated over ¥120 trillion investment by 2040
- Rapid expansion of Asian market

Challenges

- Competition with leading makers in Europe and China, and commercializing floating offshore wind farms

Policy Issues

- Technological Aspect: Support for technological development of floating offshore wind farms
- Business Aspect: Creating a domestic market, attracting domestic and overseas companies, and supporting capital investment and business matching with European companies
- Market Aspect: Creating stable demand and support for new entrants including shipbuilding firms