

Japan strives for carbon neutrality by 2050

Experts from Waseda University are advising Japan's government on how to significantly reduce **THE COUNTRY'S EMISSIONS.**

In 2020, Japan's then prime minister, Yoshihide Suga, announced the nation's aim to reach carbon neutrality by 2050 — a move long hoped for by Toshi Arimura, an environmental economist at Waseda University, who has been lobbying for a nationwide emissions trading scheme for more than 10 years.

Arimura is part of Waseda's Center for Positive/Empirical Analysis of Political Economy, an institution established to have an impact on public policy. Today, Arimura sits on carbon pricing committees for the Ministry of the Environment and the Ministry of Economy Trade and Industry. "The carbon pricing discussion has changed a lot, especially in the last year. Business is now taking climate change very seriously," he says.

In 2021, based on a research project funded by the environment ministry, Arimura co-edited a book on Japan's emissions reduction landscape, *Carbon Pricing in Japan*. In one chapter, the authors point out that Japan implemented a national carbon tax in

2012, the Global Warming Countermeasure Tax, which works in tandem with various energy taxes. "However, the nationwide average effective carbon rate of Japan is lower than the average effective carbon rates of OECD countries and its key partner countries," they write.

REGIONAL EMISSIONS TRADING SCHEMES HAVE HAD A POSITIVE IMPACT IN MORE THAN JUST THE AFFECTED REGIONS.

The researchers note that higher effective carbon rates are required globally. "A high level of carbon pricing can provide effective and consistent signals to all stakeholders, which is essential to harmonize decentralized decision making towards decarbonization," they point out.

"If we just focus on climate change," says Arimura, "I would like to see an emission trading scheme with high

enough rates to make an impact in Japan, because we know from the European Union and two Japanese regional emissions trading schemes that we can use this tactic to control emissions quantity."

But if Japan is more focused on protecting against possible negative economic impacts, he says "a carbon tax or a mixed

approach is also a good policy, if government uses tax revenue wisely". Levers to ameliorate economic impacts and bolster social support include recycling the revenue into strategic income, corporate income, or consumption tax cuts, or to invest wisely in R&D.

In 2020, Arimura and Shiro Takeda, a colleague at Kyoto

Japan has trialled two regional emissions trading schemes and seen positive flow on effects from technology and skill upgrades in other regions.



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CENTER FOR POSITIVE/EMPIRICAL ANALYSIS OF POLITICAL ECONOMY

Waseda University's Center for Positive/Empirical Analysis of Political Economy is training internationally active scholars in political science and economics to propose evidence-based solutions to social issues by helping to design government policies.

"The slowdown in economic growth in developed regions has spurred a dramatic demographic transformation," says Haruko Noguchi, who leads the centre. She points to the child poverty rate as an example, which is increasing in most OECD countries. "Various factors that inhibit the process of human capital accumulation are causing a negative cycle that transcends individuals and generations," she explains. "These systemic problems require cross disciplinary collaboration and deep thought."

The future of politics is also evidence-based policy, Noguchi adds. "But we need to have the research talent to support this, particularly in the age of big data." The centre is training researchers in data processing, and key empirical and/or experimental methods. "The idea is to produce research that can contribute actively to public policy," she says.

The centre is also expanding its international collaborations as part of the Waseda Goes Global plan, funded by the Japanese government's MEXT Top Global University Project. International research collaborations at the centre have increased from 15 in 2014 to 46 in 2020, the centre now features many courses taught by key international experts, and it is working towards establishing combined degree programmes with research institutions all over the world.



Toshi Arimura advises government in enviro-economics.



Haruko Noguchi says research shapes political paradigm shifts.

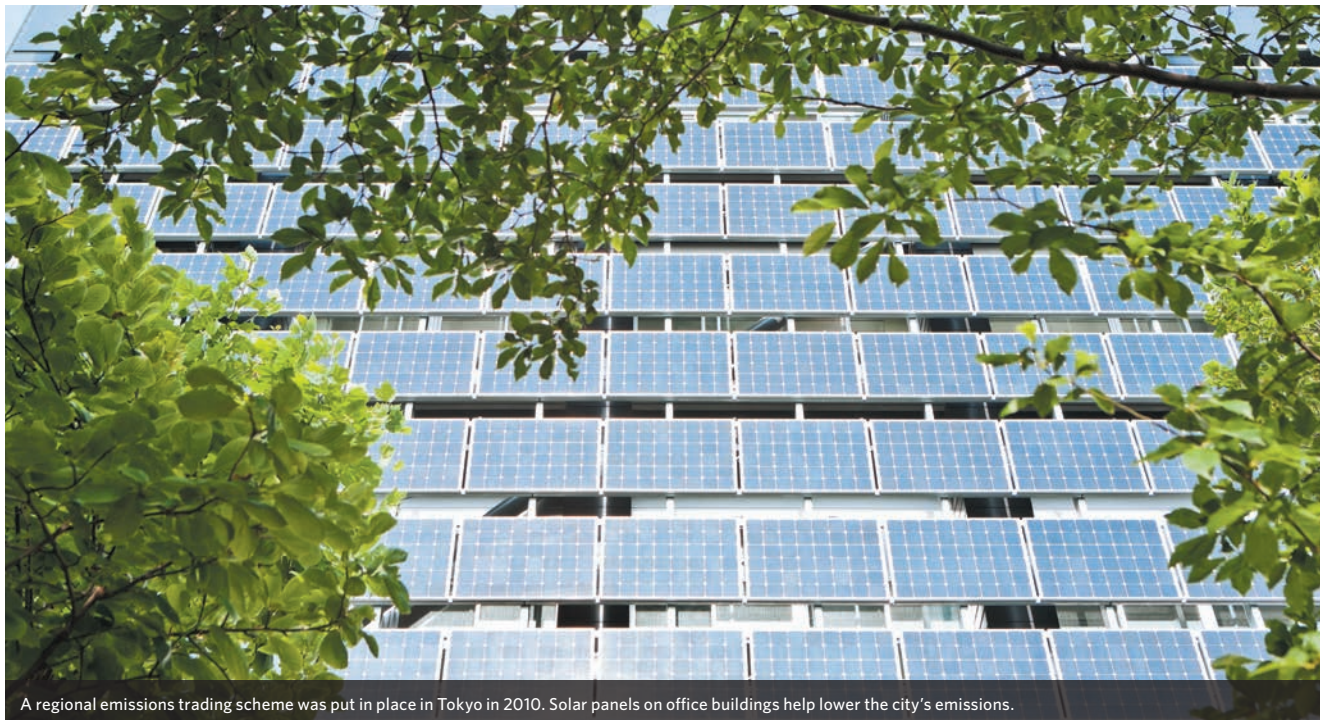
stock, which leads to a long-term expansion of production and income. "But we need to consider public opinion, and issues such as energy security. It's a complex matrix," says Arimura.

EMISSION TRADING SCHEME TRIALS

Arimura adds that emissions

trading schemes have already been shown to have benefits for Japanese industry. The country is in the midst of a third compliance stage for two regional emissions trading scheme trials, one that began in metropolitan Tokyo in 2010, and another that launched in the nearby prefecture of Saitama in 2011.

The prefecture schemes have been a success, says Arimura, with Tokyo reducing its emissions by 27%. In a 2021 paper, Arimura and his former Waseda University colleague, Taisuke Sadayuki, also noted that rather than "leaking" emissions, where a regional scheme simply transfers its emissions budget to one of the



A regional emissions trading scheme was put in place in Tokyo in 2010. Solar panels on office buildings help lower the city's emissions.

other 45 prefectures, the current schemes have had a positive impact on emissions in more than just the affected regions.

Upgrades in facilities and company knowledge have in fact been applied to other parts of Japan, says Arimura. The paper's authors suggest that this may be the result of an energy efficiency gap, where, for example, even if upgrading technology is more cost effective in the long term, companies lag due to shorter term cost constraints. "If the government puts an emission trading scheme in place, top management takes it seriously," explains Arimura. "If the change isn't government mandated, it's the task of an energy manager who may not have the power to make big decisions on investment."

In addition, wider financial incentives have shifted toward sustainable models, says

Arimura. "Lots of industry cannot get access to finance to expand their business if they do not have an environmentally conscious business plan."

EMISSIONS ARE SYSTEMIC AND CUT RIGHT ACROSS HOUSEHOLDS, SERVICES, AND INDUSTRY.

THINKING GLOBALLY, ACTING LOCALLY

The Tokyo emission trading scheme has a successful permit system for offices, showing that carbon pricing can be applied to the service sector. The impact has even been felt at the Waseda University campuses. "The Tokyo metropolitan government has been helping us reduce energy consumption and the emission reductions

have been very fast," says Arimura.

In 2021, Waseda also announced the 'Waseda Carbon Net Zero Challenge', which aims to create a research environment where undergraduate students acquire a carbon-neutral mindset and graduate students can develop cutting-edge research, and ultimately take over faculty research on carbon neutrality. The idea is to achieve virtually zero CO₂ emissions on each campus by 2032, the university's 150th anniversary.

Arimura is an example of the increasingly active type of academic that Waseda and the Center for Positive/Empirical Analysis of Political Economy is trying to foster with this initiative. He was involved in committees on the current carbon pricing in Japan, as well as advising on

the two regional emissions trading schemes.

An accelerated national effort is necessary to reach Japan's 2050 goal, adds Arimura. "The European Union is far ahead, and in Asia, South Korea has already implemented emissions trading schemes. Since July 2021, China has put in place a nationwide emissions trading scheme in the power sector." Because emissions are systemic and cut right across households, services, and industry, comprehensive modelling by independent experts will be needed to help governments make vital decisions over the next few years, he says. ■



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