



Role of VA in Japanese policy package

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Theory and Practice

- ◆ Practice first, and theory follows
 - Quantum physics
 - Energy conservation law (regulation and information measure)

- ◆ Theory of Japanese Voluntary Action(VA)?

Three Pillars of Governmental Mitigation Policy

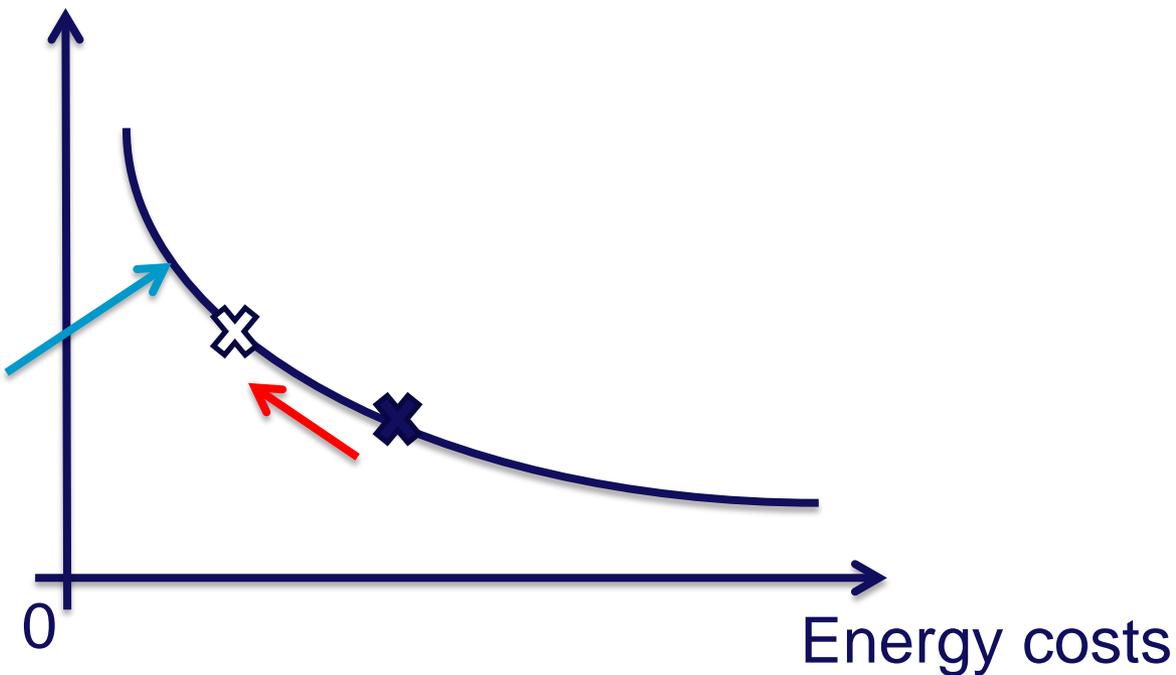
Carbon pricing: Changes cost calculation	Promote rational behavior: Fix information asymmetry and lack of coordination	Long term investment:
Tax, ETS,..	Energy conservation law	Tech development policy

(IPCC AR5, Stern Review, Grubb et al 2014)

Carbon Pricing

Non-energy
costs

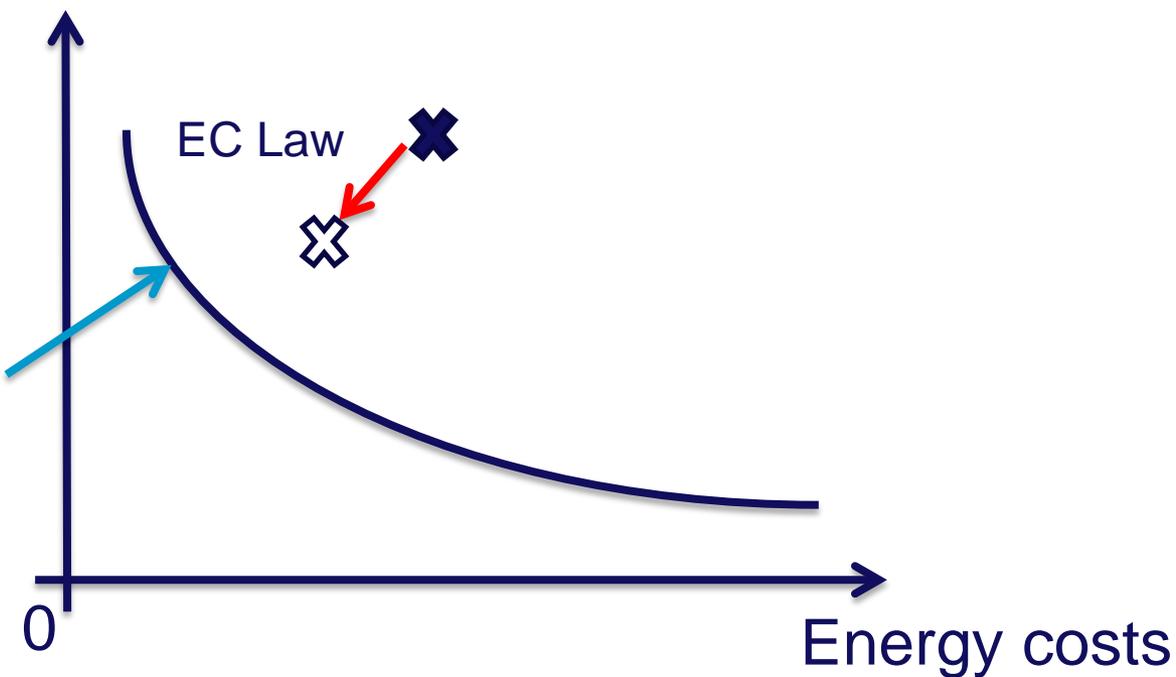
Frontier



Energy Conservation Law

Non-energy
costs

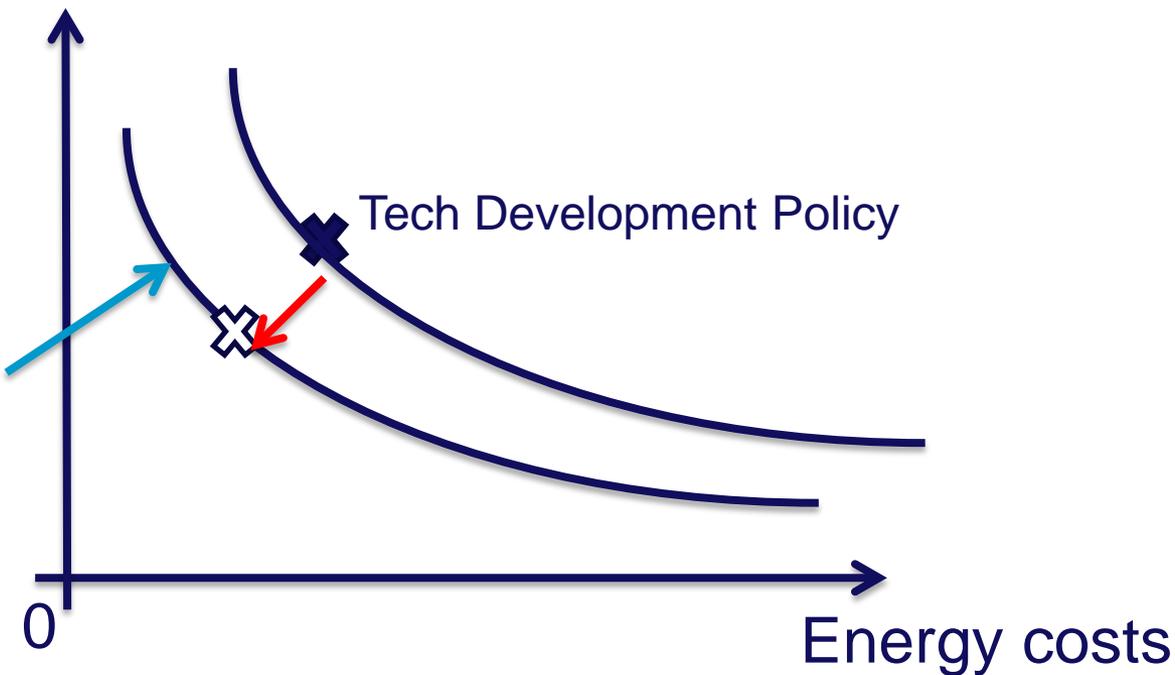
Frontier



Tech Development Policy

Non-energy
costs

Frontier



Energy Conservation Law



- ◆ implemented in 1970's, aiming at **rationalizing** the behavior of firms and individuals
 - Building sector:
 - Energy efficiency standards & labelling for almost all appliance
 - Building codes
 - Industrial sector
 - Mandatory to implement Energy Management Systems
 - Energy audits and/or tech subsidies upon request by firms
 - Transport sector:
 - Fuel economy standards & labeling
- ◆ **Remarkable success in the past.**
- ◆ **The effectiveness is getting saturated with increasing possible danger of governmental failure.**

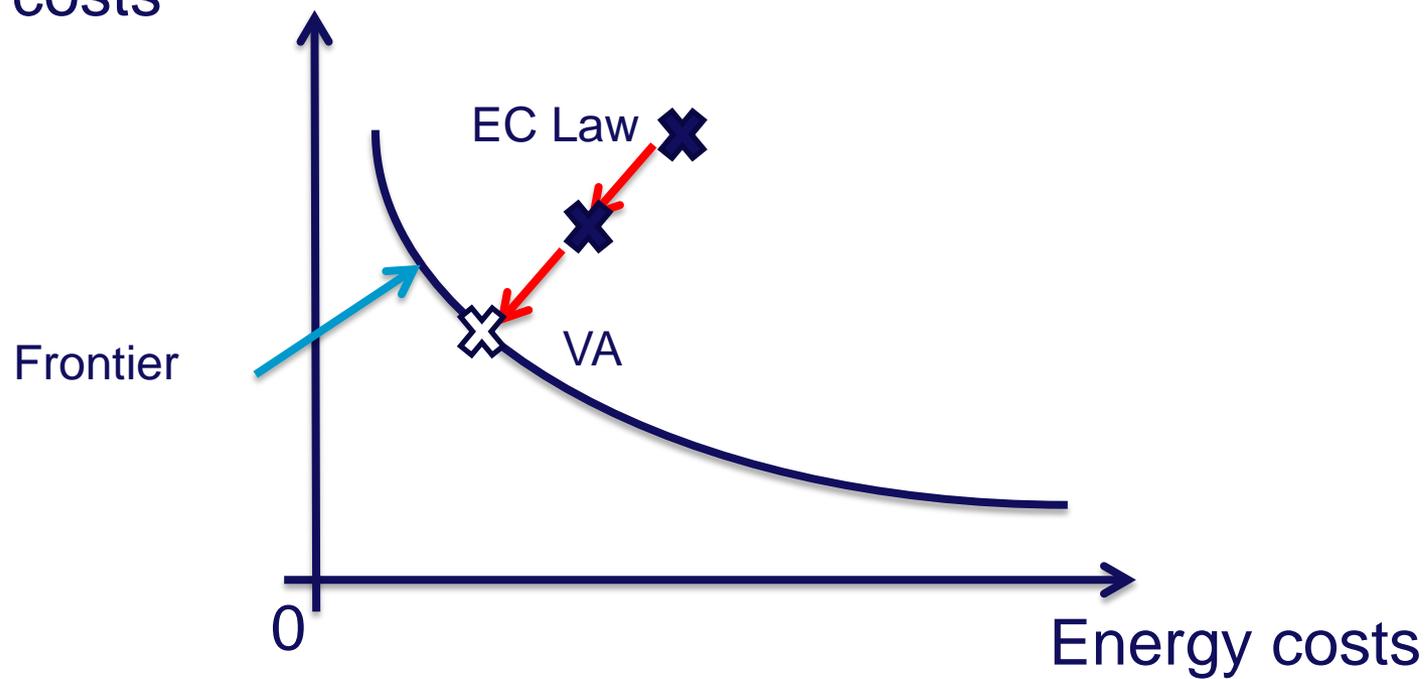
Role of VA

- ◆ VA is not in isolation. VA is part of policy packages consisting of energy conservation law, energy taxes, etc.
- ◆ Energy price and efficiency are high in Japan
 → VA is a sensible choice to fix remaining market failure while avoiding governmental failure

Carbon pricing: Changes cost calculation	Promote rational behavior : Fix information asymmetry and lack of coordination	Long term investment:
Tax, ETS,..	Energy conservation law, VA	Tech development policy

(IPCC AR5, Stern Review, Grubb et al 2014, Sugiyama & Wakabayashi 2012)

VA

Non-energy
costs

Which pillar?

- ◆ “VA as implicit carbon pricing” (1st pillar) = carrots for firms & sticks to non-compliance = European VA. Firms “buy” VA.
- ◆ “VA as maximizing rational behavior (2nd pillar) = NO need for penalty = Japanese VA.
- ◆ At firms, the distinction between 1st and 2nd pillars is not clear. VA helps firms to explore the frontier of rational actions.
- ◆ Social responsibility is another motivation in Japan

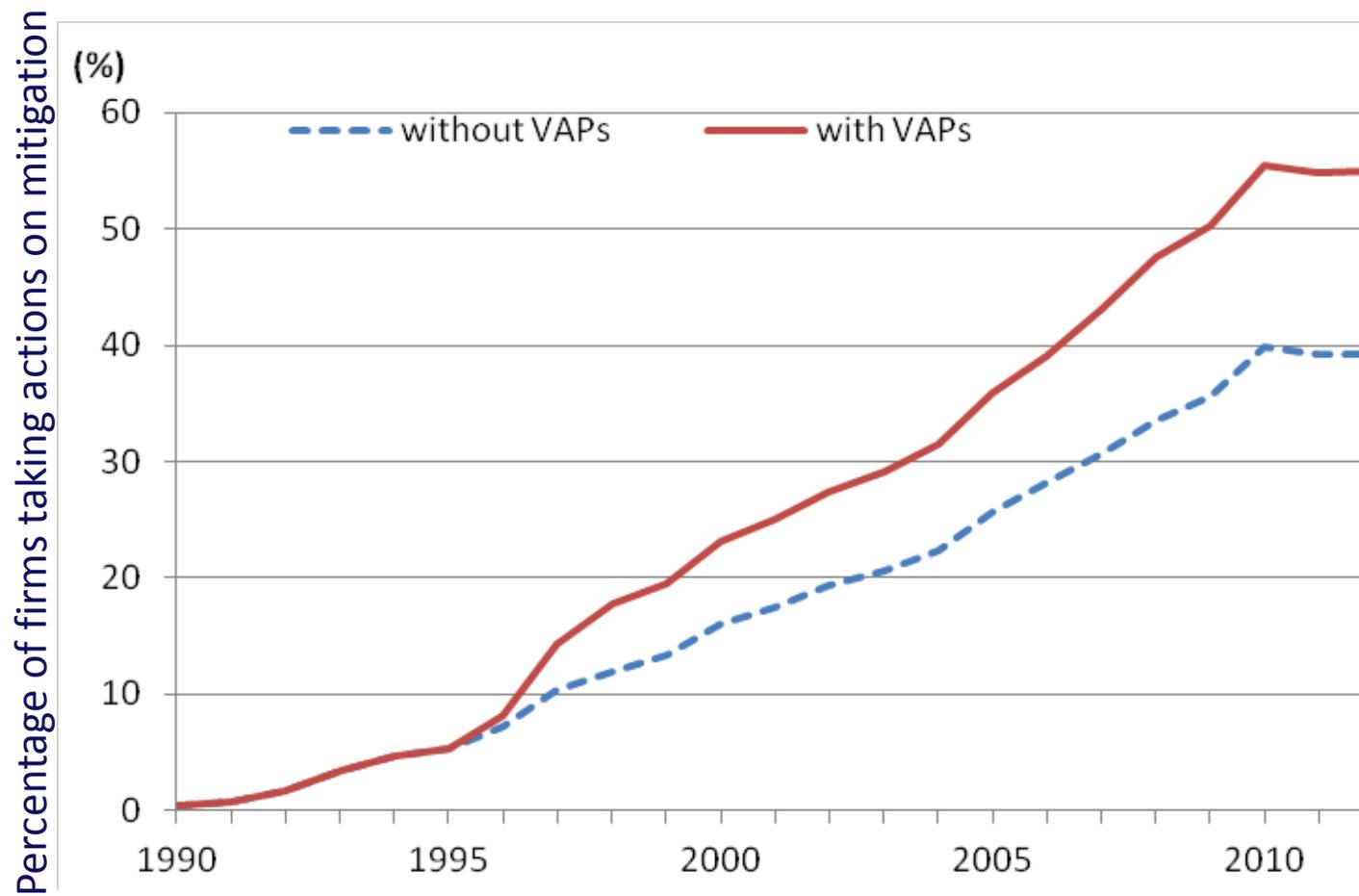
Refer to discussion of VA Workshop “VAs: experience and lessons” on August 6, 2014

Effectiveness of VA Plan by Keidanren

- ◆ Additionality difficult to analyse due to complex policy package
- ◆ High energy efficiency as the policy package
- ◆ Strong Institutional framework:
 - Annual PDCA by 3rd party committee, governmental committee.
 - Once the targets are met, it was revised to do further.
- ◆ Much evidence of enhanced actions by firms

Refer to discussion of VA Workshop “VAs: experience and lessons” on August 6, 2014

VAP by industrial association promoted actions by firms



1. Intra-industry sharing and deployment of best practices

Introducing corporate efforts via email, website, newsletter, etc.

Outline of practices

[For member companies]

- (Japan Chemical Industry Association)
Deliberation in a special committee followed by communication of results to all member companies, presentation on website, hosting of seminars, provision of information via email, distribution of pamphlets, sharing of information on grants available for energy-saving projects, based on deliberations in a special committee. (Japan Chemical Industry Association)
- (4 Electrical & Electronics Associations)
Announcement of follow-up results on website and hosting of workshops to report on business activities
- (Japan Foreign Trade Council, Inc.)
Introduction of practices in organizational newsletter, which has effectively served as media to promote environmental conservation efforts.

[For non-member companies]

- (Japan Chemical Industry Association and others)
Presentation on website, distribution of pamphlets introducing practices
- (4 Electrical & Electronics Associations)
Co-hosting of a “energy-saving / power-saving seminar” with the Japan Commerce of Commerce and Industry to introduce advanced energy-saving practices of member companies and introduction of energy-saving practices via website and at exhibitions.

(Expected) effects of practices

- Introducing best practices by industrial organizations, which are most familiar with corporate status, promises to increase acknowledgement of climate change issues as individual corporate challenges and thus encourage engagement in formerly unaddressed practices.



(Source) additions made to material on Japan Chemical Industry Association website

Reference and links

Responses from industrial organizations to questionnaire survey conducted by METI in FY2013
 METI, *Report of the Committee for the Comprehensive Review of the Voluntary Action Plan on the Environment (Reference material)*

(Source: IEEJ)

2. Efforts towards standardization

Establishing benchmark indices to enable peer comparison of performance among member companies: Japan Department Stores Association

Outline of practices

- The department store industry introduced “benchmark (top-runner) indices” in fiscal 2006 to motivate stores to strive for higher efficiency levels.
- Energy consumption in department stores is varied depending on whether parking space and warehouse operations are housed in the store building, store location (urban/rural, station building/shopping center, etc.), number of customers, array of merchandise, such as for products. Challenges include the different attitudes towards energy-saving efforts observed among stores operating in self-owned buildings and those operating as tenants.
- Provision of information to member stores as while they are still rough guidelines, the indicators enable store operators to learn where their store stands in terms of energy efficiency levels.

(Expected) effects of practices

- Member stores will become able to acknowledge where they stand among other stores in terms of energy efficiency levels through peer comparisons based on store scale.
- The compiled data promise to serve as a useful source of information in gaining understanding of the energy consumption status in each store, designing energy saving plans and other phases of the PDCA cycle and to lead to corporate efforts to promote further energy conservation.

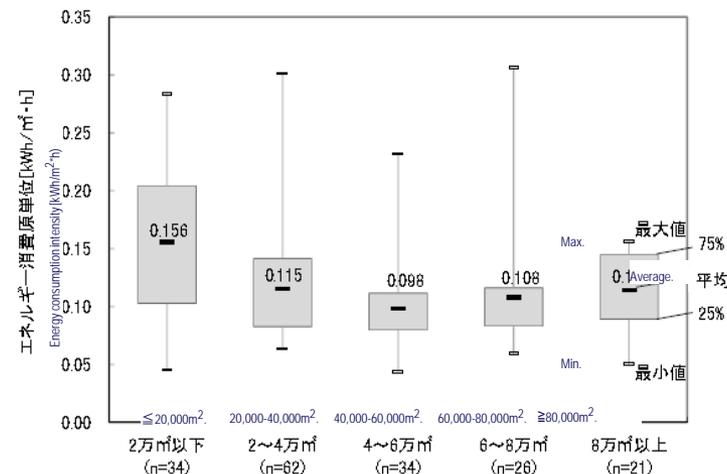


Figure 6 Energy consumption intensity by department store scale (results of July 2013 survey)

Reference and links

“Global Warming Countermeasures implemented by the department store industry” (*document distributed at meeting of Distribution and ServiceWG, Global Environment Subcommittee, Environment Committee, Industrial Structure Council*)
http://www.meti.go.jp/committee/sankoushin/sangyougijutsu/chikyuu_kankyo/r_yutsu_service_wg/pdf/001_07_01.pdf

(Source: IEEJ)

3. Other practices

Campaigning to promote efforts: Japan Chain Stores Association, Japan Automobile Manufacturers Association, Inc.

Outline of practices

- In June 2008, the Japan Chain Store Association launched an ongoing “Save the air conditioning” campaign, as cooling, heating and other air conditioning equipment in member stores have room for adjustment and improving settings would effectively reduce energy consumption. In an effort to achieve the target of “an average of 30% of customers declining plastic shopping bags” by all member companies by the end of fiscal 2010, the association also designed and distributed reusable shopping bags to encourage customers to decline plastic shopping bags.
- The Japan Automobile Manufacturers Association, Inc. joins the government and other organizations in encouraging drivers to follow the “10 Tips on Eco-Driving” for the promotion and diffusion of eco-driving. Member companies encourage eco-friendly commuting, promote “no-idling” practices, make “eco-drive” stickers, promote conversion to more eco-friendly means of commuting, and encourage “eco-walk” commuting.

(Expected) effects of practices

- Improve A/C settings in stores through association-led campaigns regarding air conditioning and foster understanding among customers using posters. In the campaign to reduce the use of plastic shopping bags, the ratio of customers declining shopping bags reached 31.01%. Although the target was achieved, the campaign will be continued.
- As the fuel-efficiency of an automobile depends on the driver’s driving practices, eco-driving practices promise higher fuel efficiency and accompanying reductions in CO2 emissions.

10 Tips on Eco-Driving

 <p>1. Soft acceleration “e-Start” Start driving the vehicle by stepping on the accelerator gently (up to 20km/h in first 5 sec). Soft acceleration in daily driving will improve fuel economy by 10%. Starting your engine slowly and gently also leads to safe driving.</p>	 <p>6. Avoid traffic congestion and leave home with time to spare Check traffic information for traffic jams and control the route to your destination on the map or car navigation tools. Leave home with sufficient time. Check traffic information as you drive to avoid congestion, thus saving fuel and time. For example, getting lost for 10 minutes on a one hour drive will cost you 13% more of fuel</p>
 <p>2. Keep a safe distance and a constant speed Try to keep at a constant speed when driving. Short distance between cars may lead to unnecessary acceleration and deceleration, aggravating fuel economy by 2% in the city and by 6% in the suburbs. Keep pace with traffic conditions to minimize speed fluctuations.</p>	 <p>7. Tire maintenance begins with air pressure checks Make it a habit to check your tires, which if short of the standard value by 50kpa (0.5kg/cm2), fuel economy decreases by 2% in the city or by 4% in the suburbs. Fuel economy can also be improved by regularly changing engine oil, oil filters, and air cleaner elements.</p>
 <p>3. Release the accelerator quickly when decelerating When you see a red signal or know that you are stopping, release the accelerator quickly. This will enable engine braking, thus improving fuel economy by 2%. Engine brake when decelerating or going downhill.</p>	 <p>8. Unload unnecessary items Unload articles that do not need to be carried. The fuel economy of a vehicle is largely affected by the weight of load. For example, driving with 100kg loaded will aggravate fuel economy by 3%. The fuel economy of a vehicle is also sensitive to air resistance. Unmount rooftop ski carriers when not in use.</p>
 <p>4. Use the A/C properly The A/C cools and dehumidifies your vehicle. If you need only the heater, switch the A/C off. When you need the A/C, be careful not to overcool the car interior. For example, when the preset temperature is 25°C, the same as the ambient temperature, fuel economy is aggravated by 12%.</p>	 <p>9. Refrain from obstructive parking Parking near intersections and other places blocking traffic cause congestion. Obstructive parking will not only aggravate the fuel economy of other vehicles but will also lead to accidents. Average driving speed is improved on roads free of obstructive parking, thus preventing decreased fuel economy.</p>
 <p>5. Stop wasteful idling Stop the engine when waiting for someone or when loading or unloading (1). Idling for 10 minutes (with the A/C turned off) consumes 130cc of fuel. Current models generally do not require warm-ups (2). Set off as soon as the engine is started.</p>	 <p>10. Know your fuel economy Make it a habit to check your vehicle’s fuel economy level. Knowledge of daily levels will keep you in tune with the effects of your eco-driving efforts. Pre-installed fuel economy meters, eco-drive navigation system, online fuel economy management are useful tools.</p>

Reference and links

JAMA website, Promotion and diffusion of Eco-drive (energy efficient driving)

http://www.jama.or.jp/eco/earth/earth_04.html

Results of the Fiscal 2012 Follow-up to the Voluntary Action Plan on the Environment (Section on Global Warming Measures): Individual Industries https://www.keidanren.or.jp/policy/2012/084_kobetsu.pdf

(Source: IEEJ)

4. Efforts in technological development

Promoting technological development across the industry:

The Japan Iron and Steel Federation

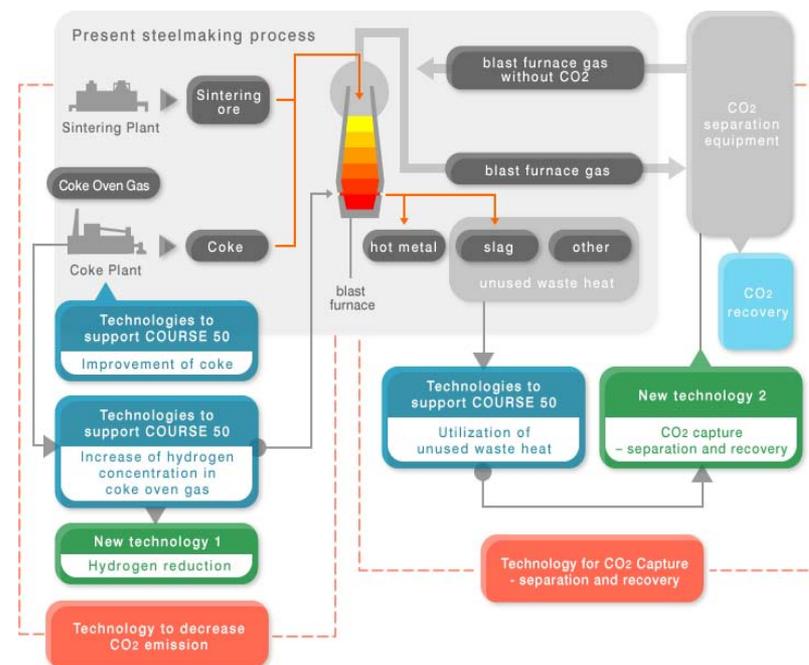
Outline of practices

- The iron and steel industry launched COURSE50 (CO₂ Ultimate Reduction in Steelmaking process by innovative technology for Cool Earth 50 in 2008), aiming to reduce CO₂ emissions by approximately 30% by controlling CO₂ emissions and CO₂ capture and storage.
- Whereas conventional reduction of iron ore using CO gas generates CO₂, hydrogen reduction only generates H₂O (water), enabling large reductions of CO₂ from being generated.
- Development of technologies to capture and store CO₂ from blast furnace gas and proactive use of unharnessed heat within the steel plant which had been deemed technologically and economically impossible to use for such processes.

(Expected) effects of practices

- Develop next-generation steel-manufacturing technologies that reduce CO₂ emissions by approximately 30% by reducing CO₂ emission and capturing and storing CO₂.
- Establish technologies by 2030 for practical use and diffusion by 2050.

Outline of COURSE 50



Reference and links

The Japan Iron and Steel Federation website
<http://www.jisf.or.jp/course50/outline/>

METI, "Global Warming Countermeasures in the Iron and Steel Industry" (material distributed at a meeting of the Iron and Steel WG, Global Environment Subcommittee, Environment Committee, Industrial Structure Council (Dec. 24, 2012), Reference 4-1)
http://www.meti.go.jp/committee/summary/0004513/pdf/2012_04_01.pdf

(Source: IEEJ)