WWF BRIEFING JPN 2013

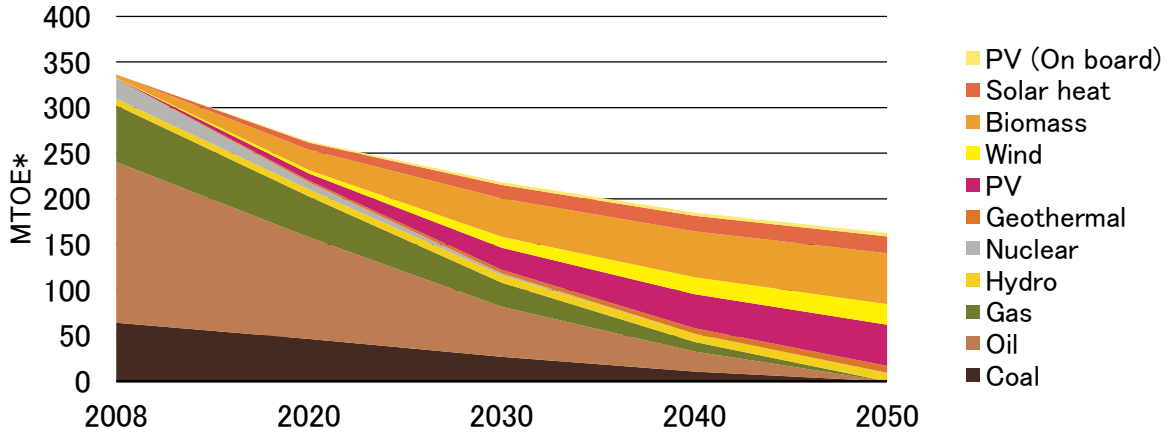
WWF Energy Scenario for Japan

Even without nuclear, **more than 15%** emission reduction target is possible for 2020 (compared to 1990 levels)

The Global Energy Report (by WWF International)
http://www.wwf.or.jp/re100global
The Japanese Energy Scenario
http://www.wwf.or.jp/re100

Energy Supply in the WWF Scenario

*MTOE = million tonnes of oil equivalent



Background:
WWF International has issued the Energy Report "100% renewable globally is possible by 2050" in February 2011, followed by regional 100% renewable report in each country. WWF Japan has published its own 100% renewable Japan Scenario in 2011 to 2013, consisting of four scenarios: 1) Energy Efficiency, 2) Renewables, 3) Cost Analysis, 4) Grid Scenario, to show that 100% renewable society by 2050 is possible in industrialized country such as Japan, both technically and economically.
Key points are to improve energy efficiency with the existing technology rapidly so that we could cut our energy consumption by half, and while phasing out the nuclear power plants, boosting the renewables to 100% by 2050.

CO_2 Emission

CO2 emissions in the WWF Scenario reaches zero in 2050 as all the energy sources become renewables. (CO2 emissions from energy use only). WWF Scenario indicates 25% reduction compared to 1990 levels by 2020 is possible. Under WWF Scenario, there is still nuclear left in the energy system as of 2020. If the nuclear is replaced with gas, **22%** reduction is still possible. Even with coal, we could still reduce **17.8%** by 2020 compared to 1990 levels.

CO2 emissions in the WWF Scenario

	1990	2020	2030	2040	2050
CO2 Emissions(MTOE)	1,059	**797**	447	179	0
% to 1990 levels	0%	**-25%**	-58%	-83%	-100%
Without nuclear	(0%	**-17.8% (877) (when coal replaces) -22% (833) (when gas replaces)**			-100%

Overall supply structure (original nuclear phasing out scenario)

MTOE	2008		2020		2030		2040		2050	
	MTOE	%	MTOE	%	MTOE	%	MTOE	%	MTOE	%
Coal	64	19%	46	18%	27	12%	11	6%	0	0%
Oil	176	52%	111	42%	55	25%	22	12%	0	0%
Gas	62	18%	45	17%	26	12%	11	6%	0	0%
Hydro	7	2%	8	3%	8	4%	9	5%	10	6%
Nuclear	22	7%	8	3%	2	1%	0	0%	0	0%
Geothermal	0	0%	2	1%	4	2%	6	3%	7	5%
PV	0	0%	8	3%	24	11%	37	20%	45	28%
Wind	0	0%	4	1%	12	6%	19	10%	23	14%
Biomass	4	1%	22	8%	42	19%	50	27%	56	34%
Solar heat	0	0%	8	3%	15	7%	17	9%	18	11%
PV (On board)	0	0%	1	1%	3	1%	3	2%	4	2%
Total	336	100%	263	100%	218	100%	185	100%	163	100%

Clear and ambitious renewable targets and energy efficiency target are needed

To give policy directions, it is crucial to have clear and ambitious renewable targets for both electricity and heat/fuel, and energy efficiency target. Based on the WWF Scenario, following targets can be suggested for electricity and heat/fuel.

Renewable and Energy Efficiency targets based on the WWF Scenario

		2008	2020	2030	2040	2050
Renewable Target	Electricity	11%	30%	50%	80%	100%
	Heat and Fuel	1%	15%	40%	55%	100%
Energy Efficiency Target (Rate compared to 2008)		0%	-20%	-30%	-40%	-50%

Source of all figures: WWF Japan.