

global warming:
nuclear power is **not**
the answer

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Press briefing: **The G8 and Japan: More Hot Air
Over Global Warming?**

The nuclear industry, supported by some governments, has seized on global warming as an opportunity to promote nuclear energy as a CO₂-free solution to global warming.

Generation of electricity by nuclear power plants is **not** a viable response to this crisis.

There are only two potential ways that nuclear power could tackle global warming:

By using **current** nuclear power plants already online.

By building and using **new** nuclear power plants.

The industry's scenario is fundamentally flawed, because current nuclear power plants are **aging**.

They are going to require more maintenance and will break down more often.

Many of them will be shut down: they won't be around to "fight" global warming.

Today



435 nuclear plants worldwide.

By 2025



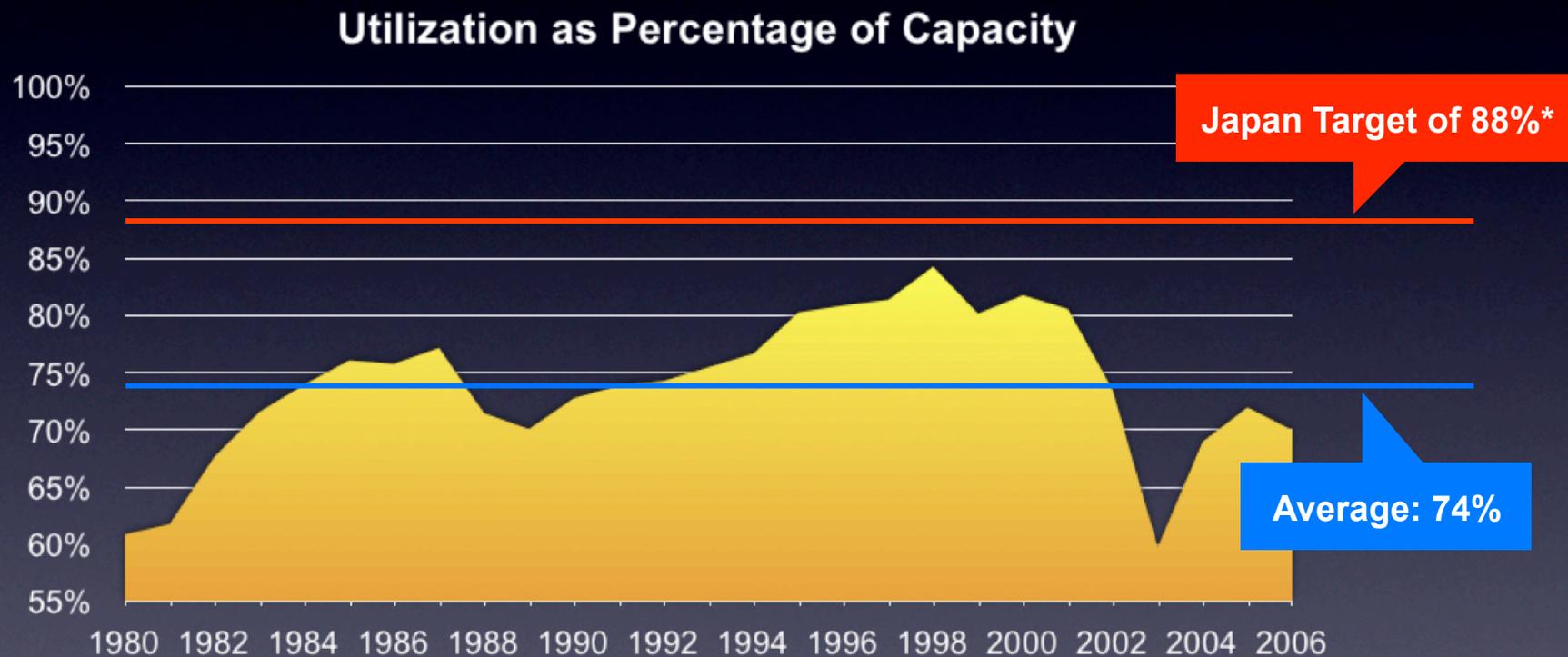
Half of today's plants will be too old to operate.*

(assuming 40-year lifespan)

In reality, total operating capacity will **decrease**, not increase

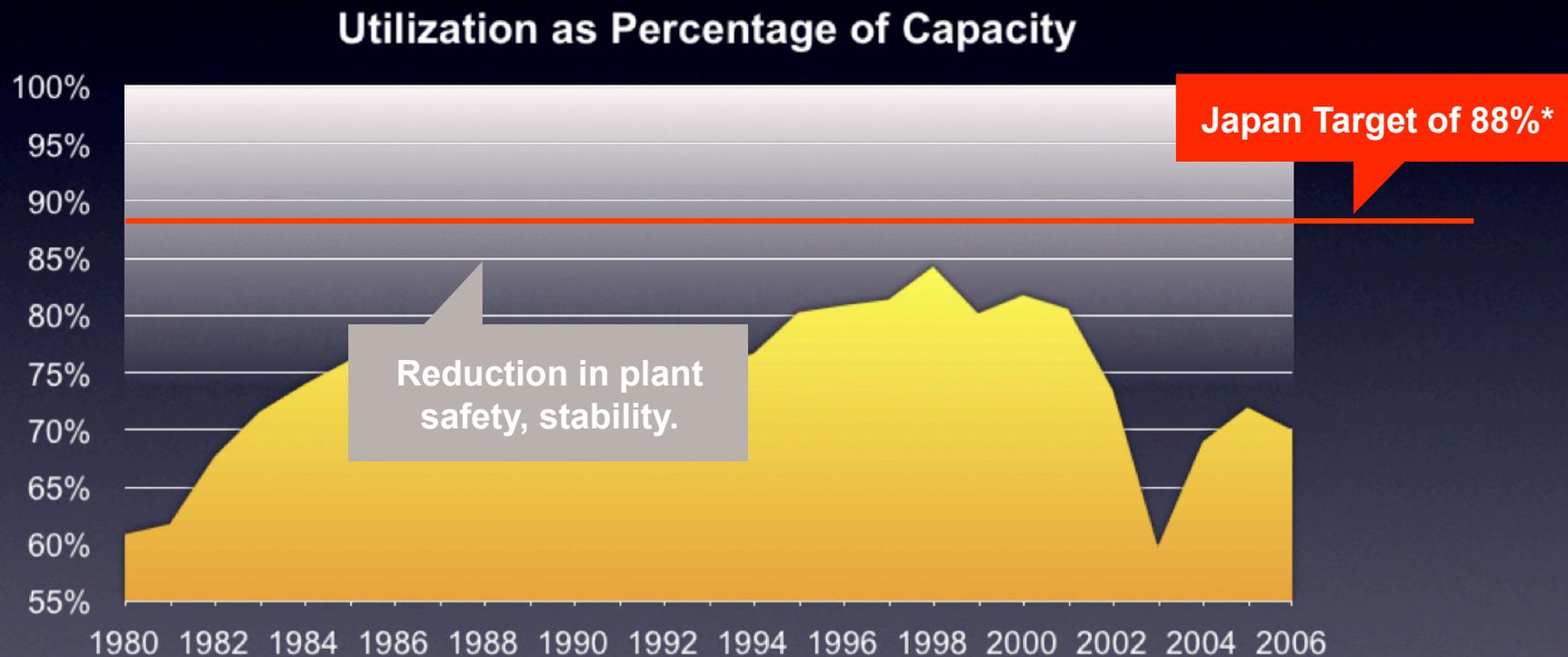
Using current nuclear power plants to fight global warming would require an **impossible increase** in utilized capacity.

Nuclear Power in Japan



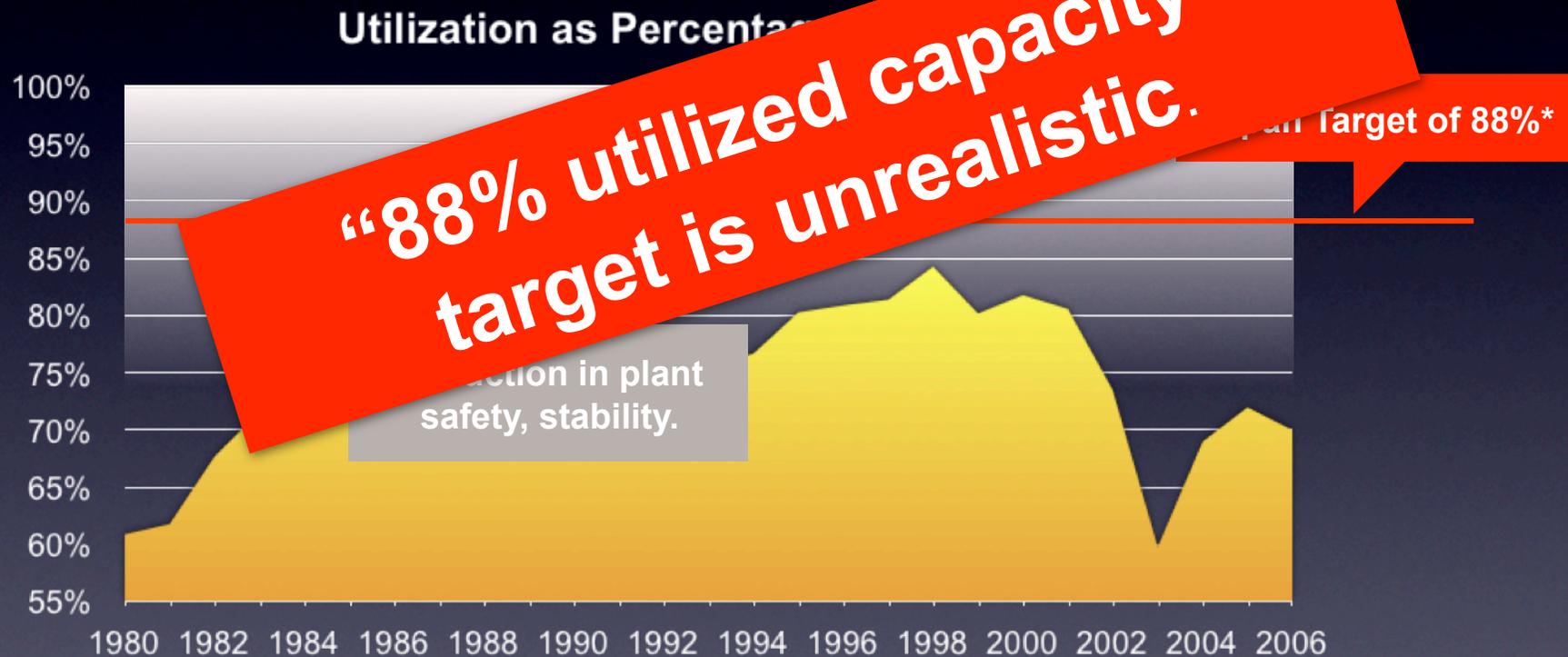
* Set by Japan Ministry of Economy, Trade and Industry

Nuclear Power in Japan



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For example, look at the recent track record for utilized nuclear capacity at Japan's largest electric utility, TEPCO (Tokyo Electric):

2002	2003	2004	2005	2006	2007
60.7%	26.3%	61.7%	66.4%	74.2%	44.9%

Reactor shutdown due to data falsification scandal.

All 7 Kashiwazaki-Kariwa reactors shut down due to earthquake.

Nuclear power is **unreliable for fighting global warming.**

Scandals, earthquakes and accidents can shut down numerous plants simultaneously.

When one of these problems occurs, without sustainable alternative energy sources, **fossil fuel plants** must kick in, spiking greenhouse gas emissions.

For centralized, large systems like nuclear generation, utilities must install a “**reserve margin**” of extra capacity ready for instant use. (e.g. In Japan, every new nuclear power plant requires additional fossil-fuel-fired capacity).

Nuclear power plants and fossil fuel plants come in **tandem.**

Planning and building new nuclear power plants will NOT contribute to combating global warming over the next decade.

Construction of nuclear power plants takes a long time: **at least a decade** is required from drawing board to electricity production.

Over the next decade there will be **ZERO** additional contribution from nuclear power in the fight to combat global warming.

Nuclear power has been condemned on the following commonsense grounds:

Substituting coal-fired power plants with non-nuclear technologies is cheaper and faster.

Nuclear power is the costliest option among all main competitors. (As documented by MIT, Keystone, and other industry sources)

New nuclear power is so costly that shifting a dollar/euro from nuclear to efficiency protects the climate four to seven times more than shifting a dollar/euro of spending from coal to nuclear.

Wind, recovered-heat industrial cogeneration, and end-use efficiency cost less than nuclear power per kilowatt-hour. (e.g. In the USA at least one-third less). (Rocky Mountain Institute)

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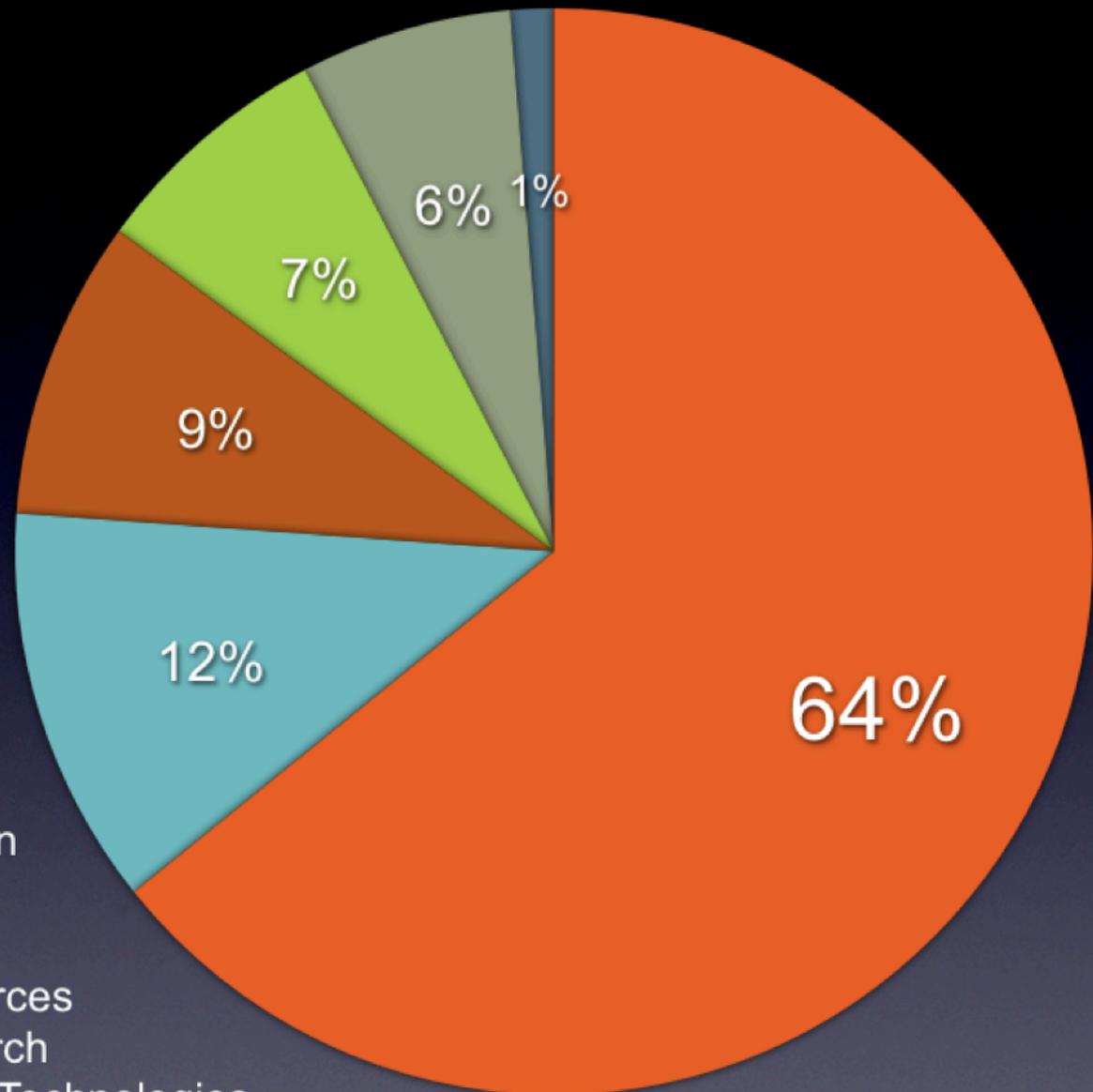
*For USA, France, and Germany

Nuclear power will make
global warming **worse**.

Nuclear power diverts private and public investment away from better alternatives: **conservation, energy efficiency and renewables.**

Japanese Government Energy Research & Development Budget*

- Nuclear Fission & Fusion
- Energy Efficiency
- Fossil Fuels
- Renewable Energy Sources
- Total Other Tech/Research
- Other Power & Storage Technologies



*2005 Source: International Energy Agency (IEA), 2006

What about R&D for new nuclear technologies?

Japan is the nuclear industry's hope in **fast breeder reactor** development.

Commercialization has been delayed 8 times and is 80 years behind original schedule.

Current date for commercialization: "By 2050"

CONCLUSION:

Fast-breeder reactors will **not** play any role in the fight against global warming during the next half-century.

“...spending a dollar on new nuclear power instead of on efficient use of electricity has a worse climate effect than spending that dollar on new coal power!”

“Forget Nuclear”, Rocky Mountain Institute, Spring 2008

Construction costs are rising:

Construction costs worldwide have risen far faster for nuclear than non-nuclear plants.

The nuclear industry's flagship project in Finland by France's top builder, Areva, is at least 24 months behind schedule and **\$2 billion over budget.***

*after 28 months' construction: spring 2008

Nuclear power — too costly to matter

“Nuclear power, once claimed to be too cheap to meter, is now too costly to matter.”

The Economist, 2001

Nuclear power — too costly to matter

In current liberalized markets, investors have no incentives to back the construction of new nuclear power plants because of their capital intensity, “engineering difficulties” and “regulatory creep.”

— article in *The Energy Journal*,
published by the International Association for Energy Economics

Standard & Poor’s Rating Services found that “an electric utility with a nuclear exposure has weaker credit than one without and can expect to pay more on the margin for credit”.

—“Why a Future for the Nuclear Industry is Risky”,
Peter Bradford, (Former Commissioner, U.S. Nuclear Regulatory Commission) and
David Schlissel (Synapse Energy Economics, Inc.),
January 2007

“Capitalists favor climate-protecting competitors with less cost, construction time, and financial risk.”

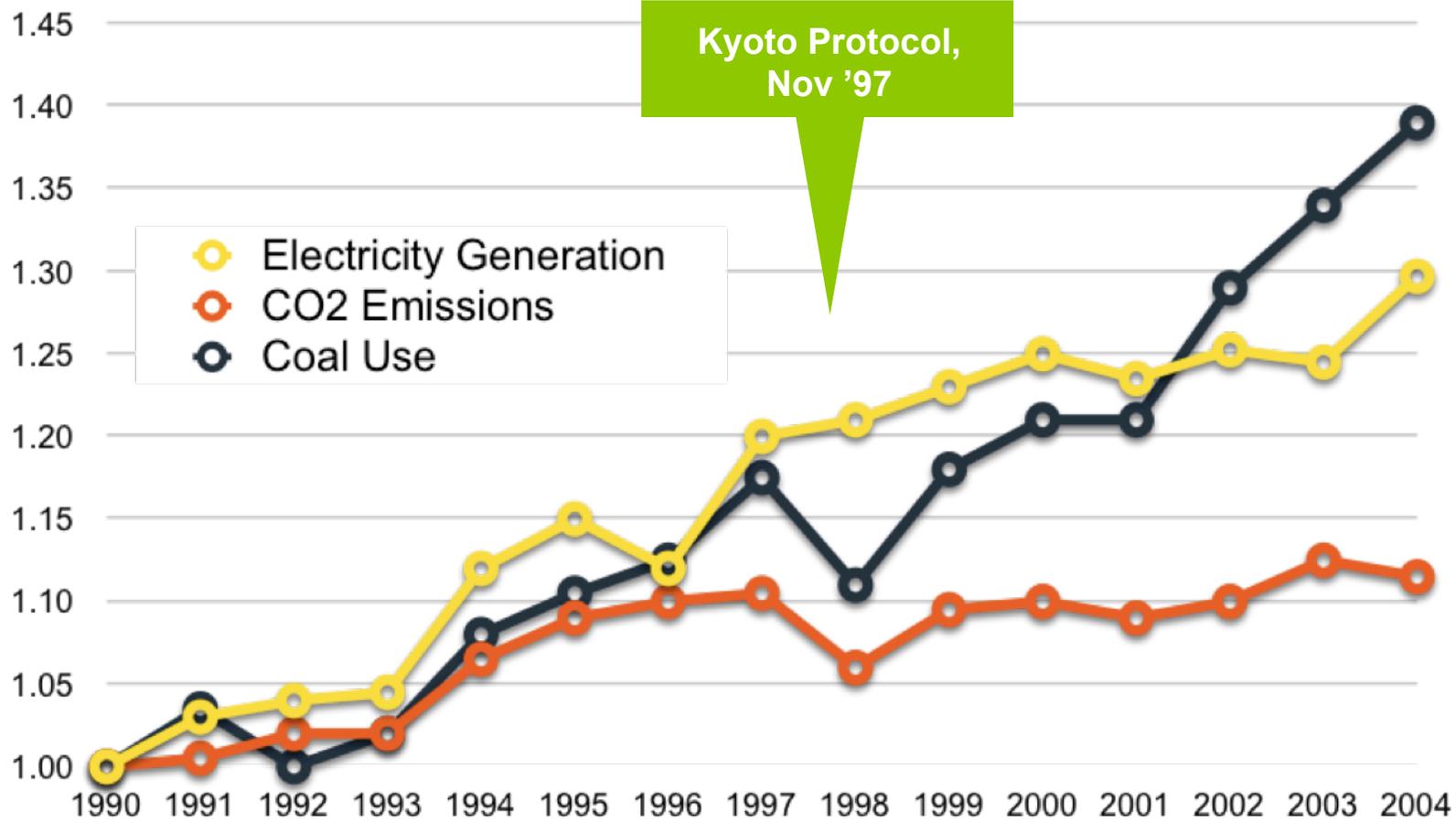
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Nuclear power contributes only 6% of world energy.

Even if the number of nuclear power plants could be doubled, which is impossible, their total contribution to world energy use would only increase to 12%.

We must combat global warming in better ways.

Japan: Electricity Generation, CO2 Emissions, Coal Use



Micropower and negawatts together provide about half the world's new electrical services.

Worldwide, micropower alternatives **surpassed** nuclear power's electricity output in 2006.

Nuclear power is **NOT the answer to global warming.**

ANSWER:

Reducing energy demand through conservation and efficiency

Micropower renewables