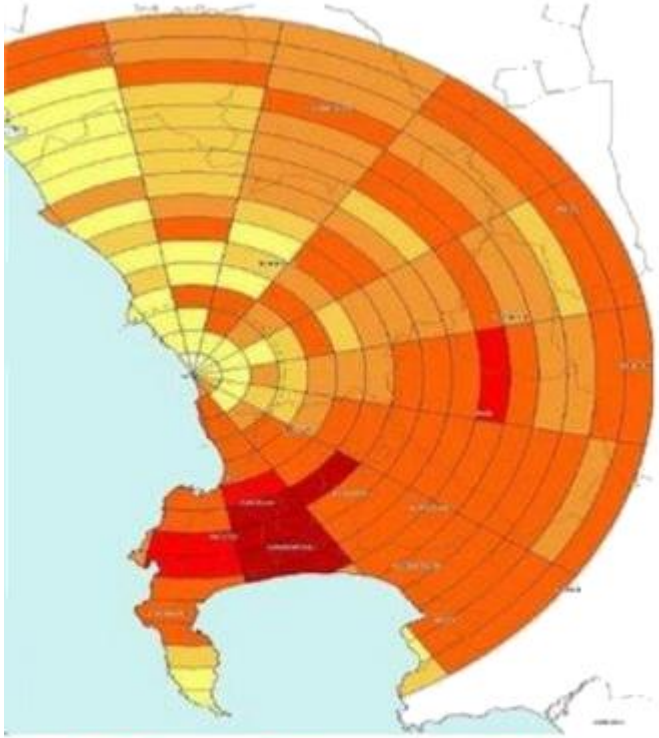
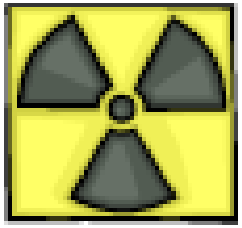
IRP2 Draft Report

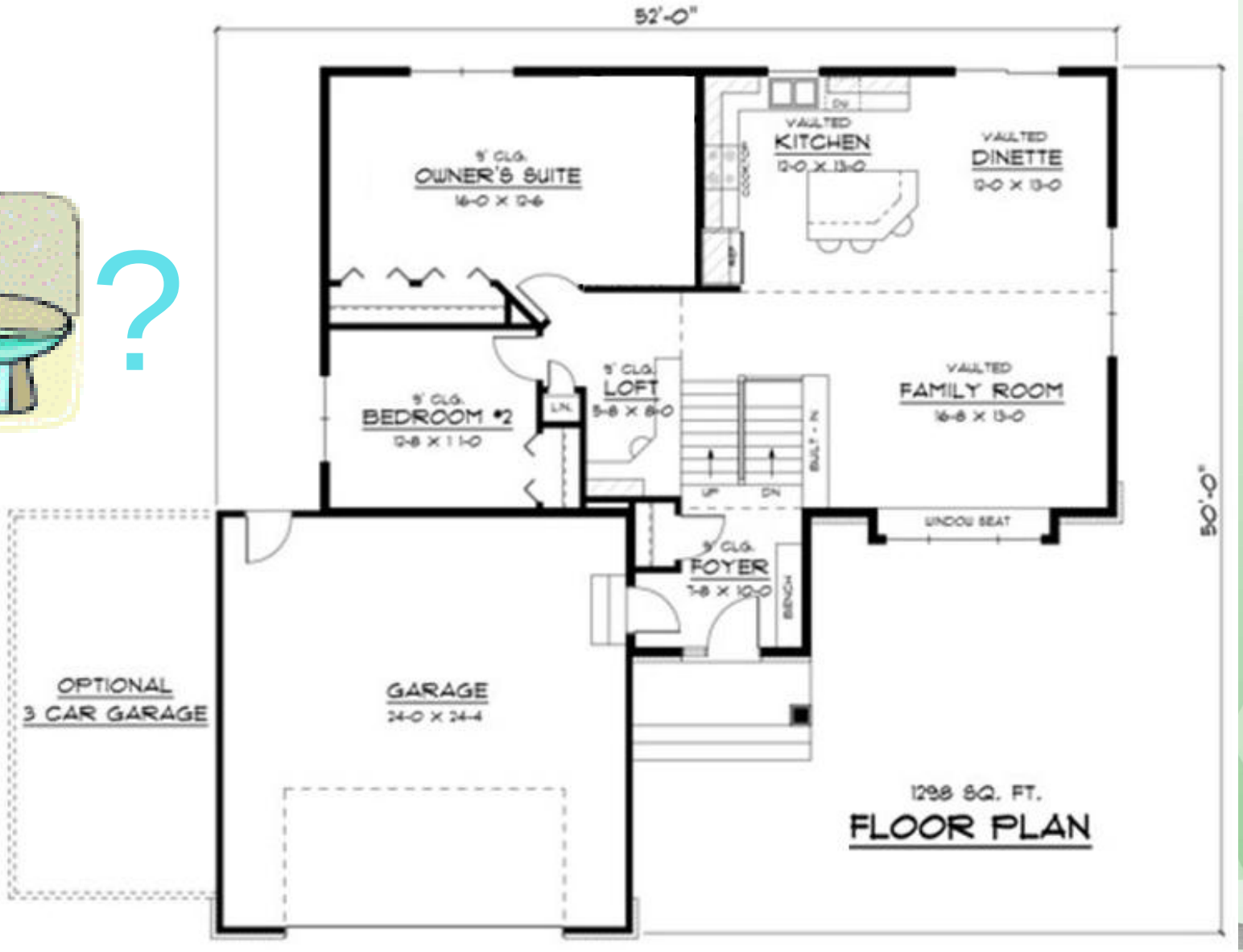


K.A.A.



What‘s missing from this plan?

?



>200m^3 in 2008? 30x20x5 = 3600m^3?

Missing Information

Nuclear Waste – High Level

An inevitable consequence of building nuclear power stations is the accumulation of high level waste, or spent fuel.

In order to participate meaningfully in this process, we need to know the details of how this waste will be managed once the nuclear plant closes, including:

- Where will the waste be transported to?
- How will it be transported?
- Where will the long term storage facility be?
- What are the plans for the construction of this facility?
- How long will this facility need to be maintained?
- What will this facility cost to build?
- What will the running costs of this facility be?

Missing Information
Nuclear Plant Cost overruns

- Page 20 of the Draft IRP2

"e) Cost of technologies
The assumed costs for nuclear capacity have elicited much debate. There is a strong probability that the costs could be higher than those assumed."

Recent experience has shown (c.f. Areva plant in Finland) that costs can overrun by 200%.

There is no complete modelling of the period up to 2030 taking into account the 40% increase mentioned in the IRP2 draft.

The risk of large cost overruns for nuclear plants is not taken into account in the modelling.

Radioactive Leaks in France

- **29 May 2006 Soulaine waste dump, in Champagne**
  - Fissures in the storage cells
  - "… ground water and many outlets are highly contaminated with tritium."
  - "… levels have reached thousands of times the natural background level."

- **7 July 2008, Tricastin plant, near Avignon**
  - “Approximately 30 cubic metres of liquid containing unenriched uranium spilled from an overflowing reservoir at the Tricastin facility, which handles liquids contaminated by uranium, into the ground and into the Gaffiere and Lauzon rivers."

- **18 July 2008 Roman-sur-Isere plant, north of Bollene.**
  - “Paris-based Areva announced that uranium may have been seeping out of a broken pipe for years”

- **July 2008, Tricasten**
  - About 74 kilograms of uranium leaked from a nuclear waste plant owned by Areva.

Major Nuclear Industry Accidents

December 12, 1952
A partial meltdown of a reactor's uranium core at the Chalk River plant near Ottawa, Canada, resulted after the accidental removal of four control rods. Although millions of gallons of radioactive water poured into the reactor, there were no injuries.

October 1957
Fire destroyed the core of a plutonium-producing reactor at Britain's Windscale nuclear complex - since renamed Sellafield - sending clouds of radioactivity into the atmosphere. An official report said the leaked radiation could have caused dozens of cancer deaths in the vicinity of Liverpool.

Winter 1957-'58
A serious accident occurred during the winter of 1957-58 near the town of Kyshtym in the Urals. A Russian scientist who first reported the disaster estimated that hundreds died from radiation sickness.

January 3, 1961
Three technicians died at a U.S. plant in Idaho Falls in an accident at an experimental reactor.

July 4, 1961
The captain and seven crew members died when radiation spread through the Soviet Union's first nuclear-powered submarine. A pipe in the control system of one of the two reactors had ruptured.

October 5, 1966
The core of an experimental reactor near Detroit, Mich., melted partially when a sodium cooling system failed.

January 21, 1969
A coolant malfunction from an experimental underground reactor at Lucens Vad, Switzerland, releases a large amount of radiation into a cave, which was then sealed.

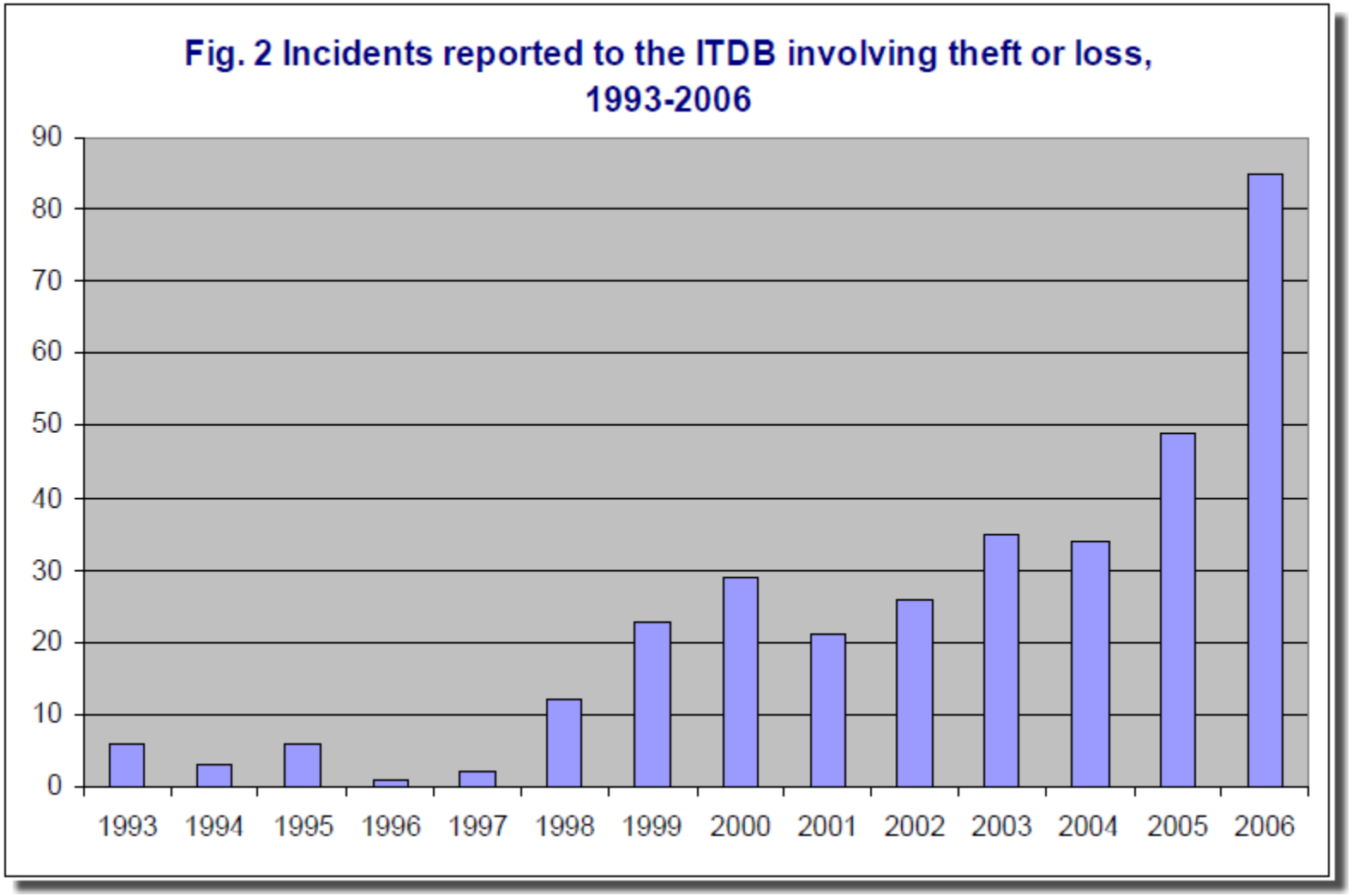
December 7, 1975
At the Lubmin nuclear power complex on the Baltic coast in the former East Germany, a short-circuit caused by electricians installer started a fire. Some news reports said there was almost a meltdown of the reactor core.

March 28, 1979
Near Harrisburg, Pennsylvania, America's worst nuclear accident occurred. A partial meltdown of one of the reactors forced the evacuation of the residents after radioactive gas escaped into the atmosphere.

February 11, 1981
Eight workers are contaminated when more than 100,000 gallons of radioactive coolant fluid leaks into the contaminant building of the Tennessee Valley Authority's Sequoyah 1 plant in Tennessee.

The risk of a large cost for clean up after a nuclear accident or leak is not taken into account in the modelling.

IAEA Illicit Trade database



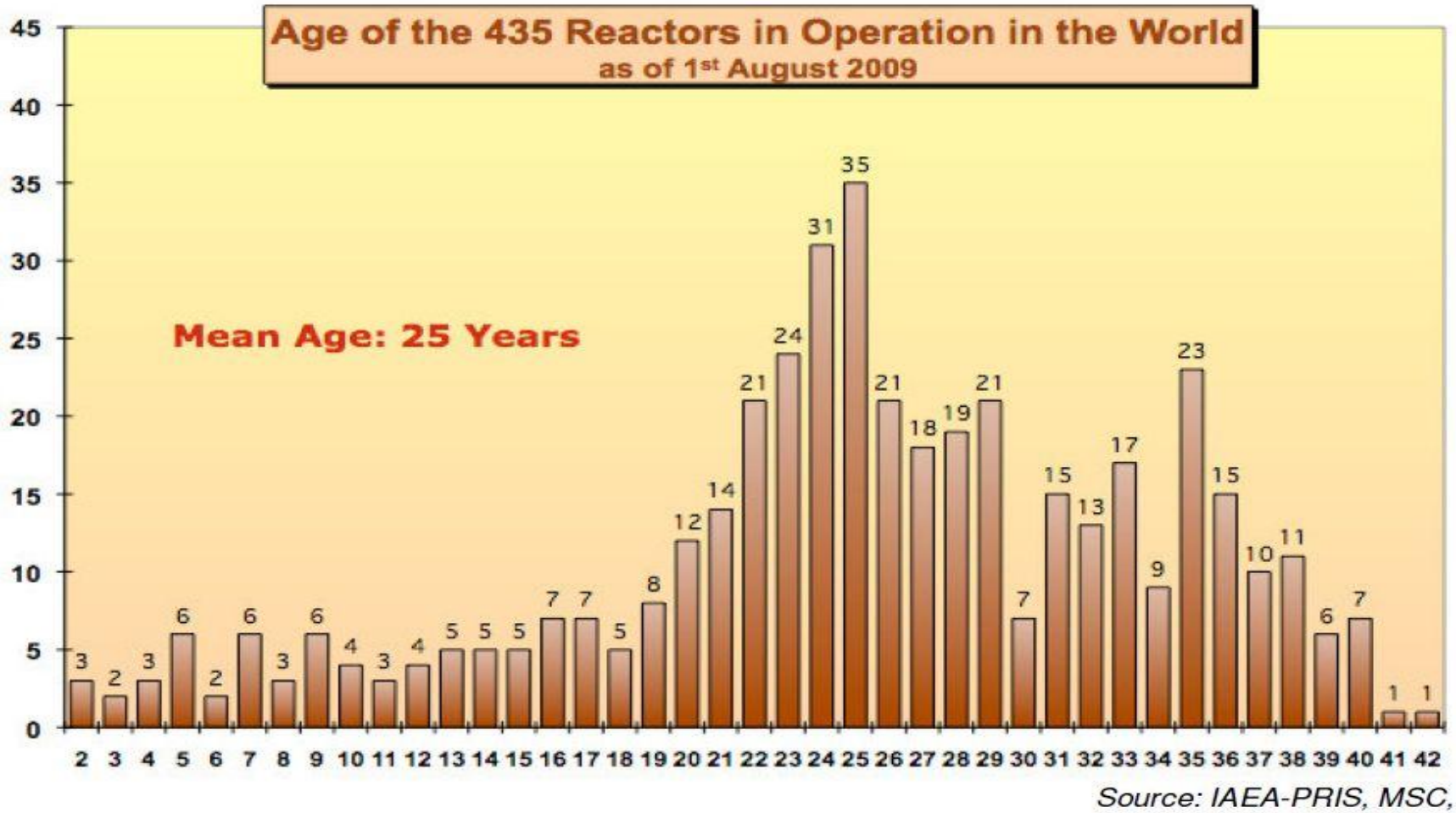
http://www.iaea.org

Missing Information
Costs of nuclear security

The costs of maintaining security of is omitted from the modeling. These should include:

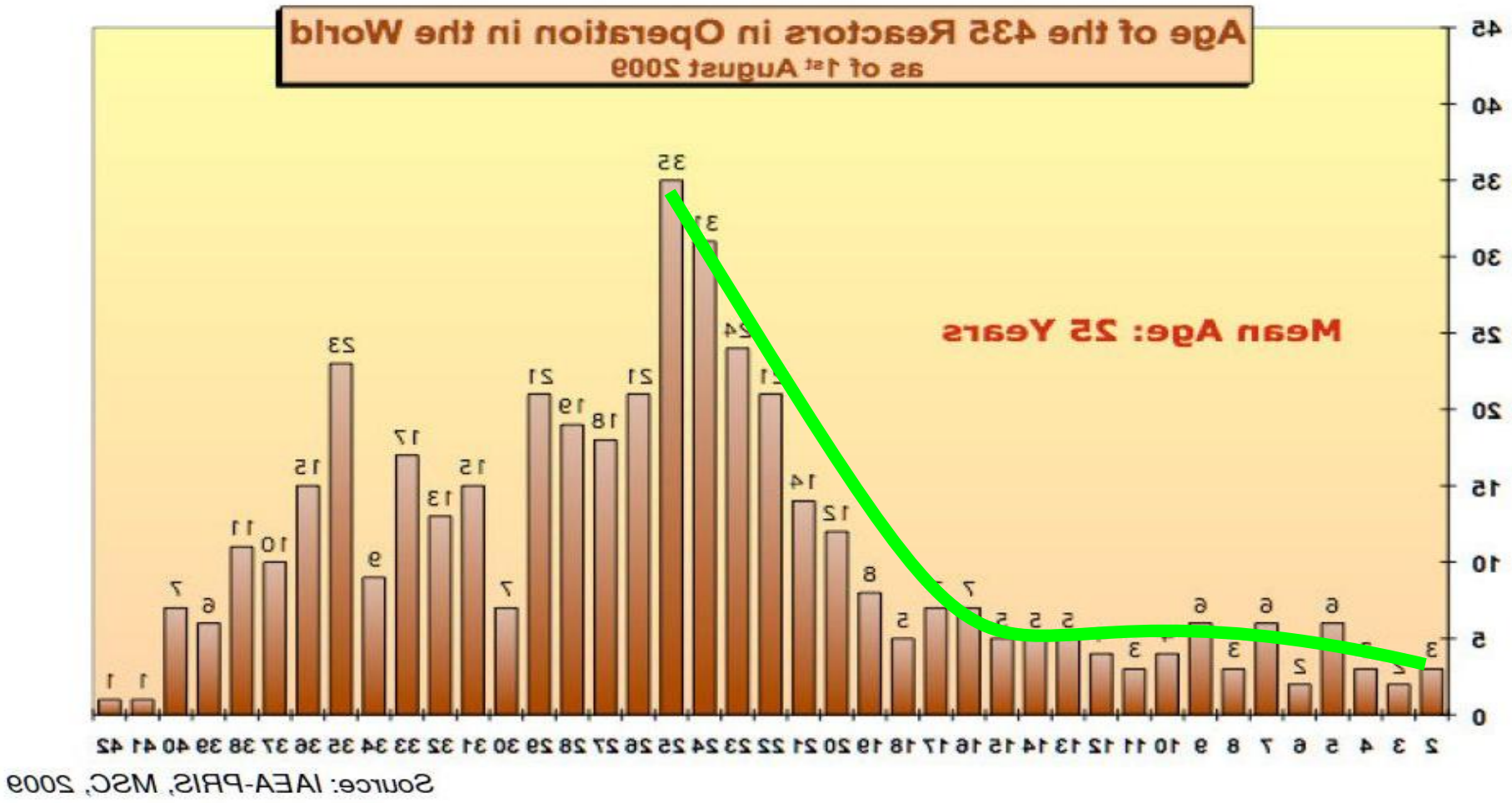
- Port security
- Transport of new fuel and spent fuel
- Counter terrorism

This cost is externalised and ignored in the IRP2.



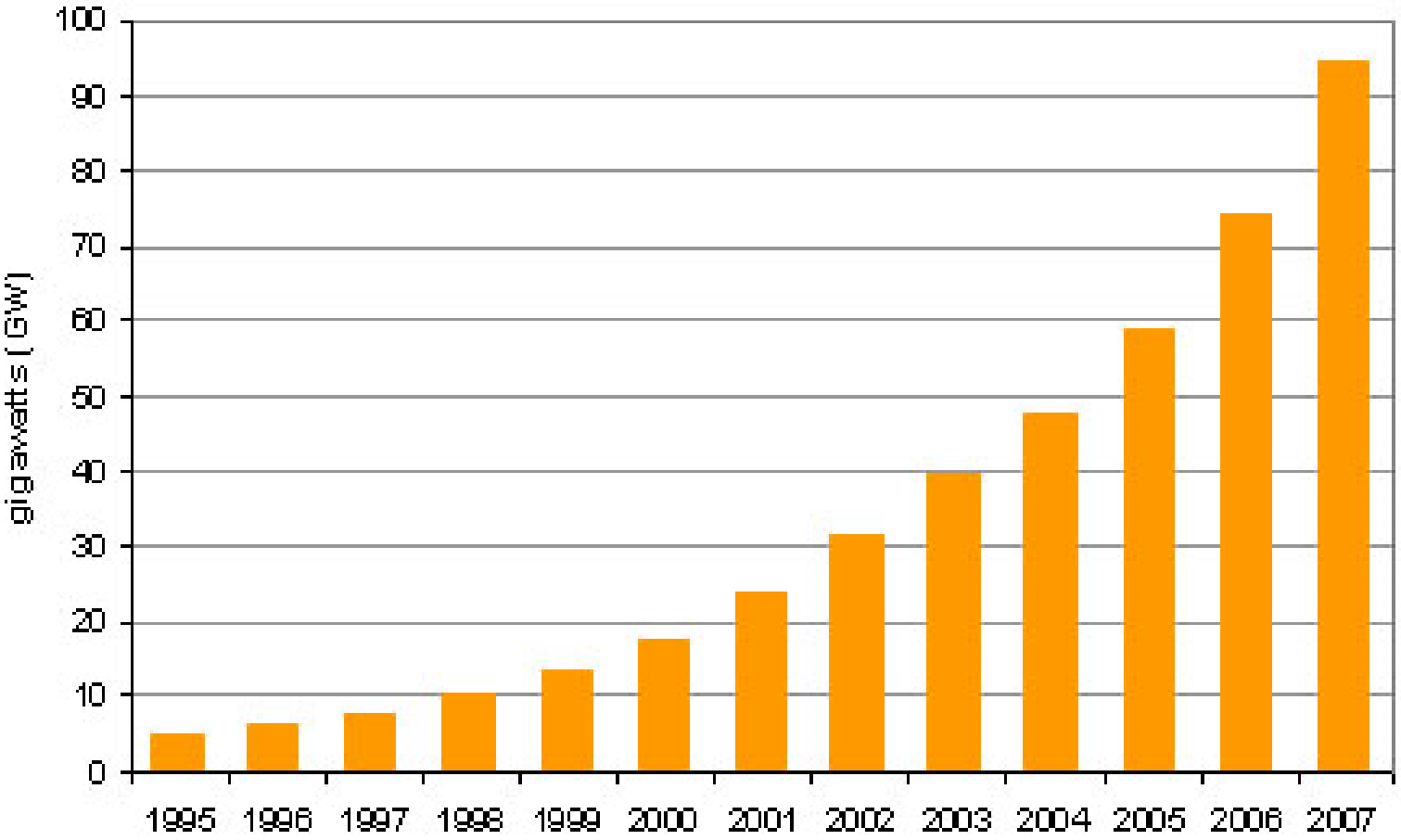
Chernobyl

Three Mile Island



THERE IS NO NUCLEAR 'RENAISSANCE'!

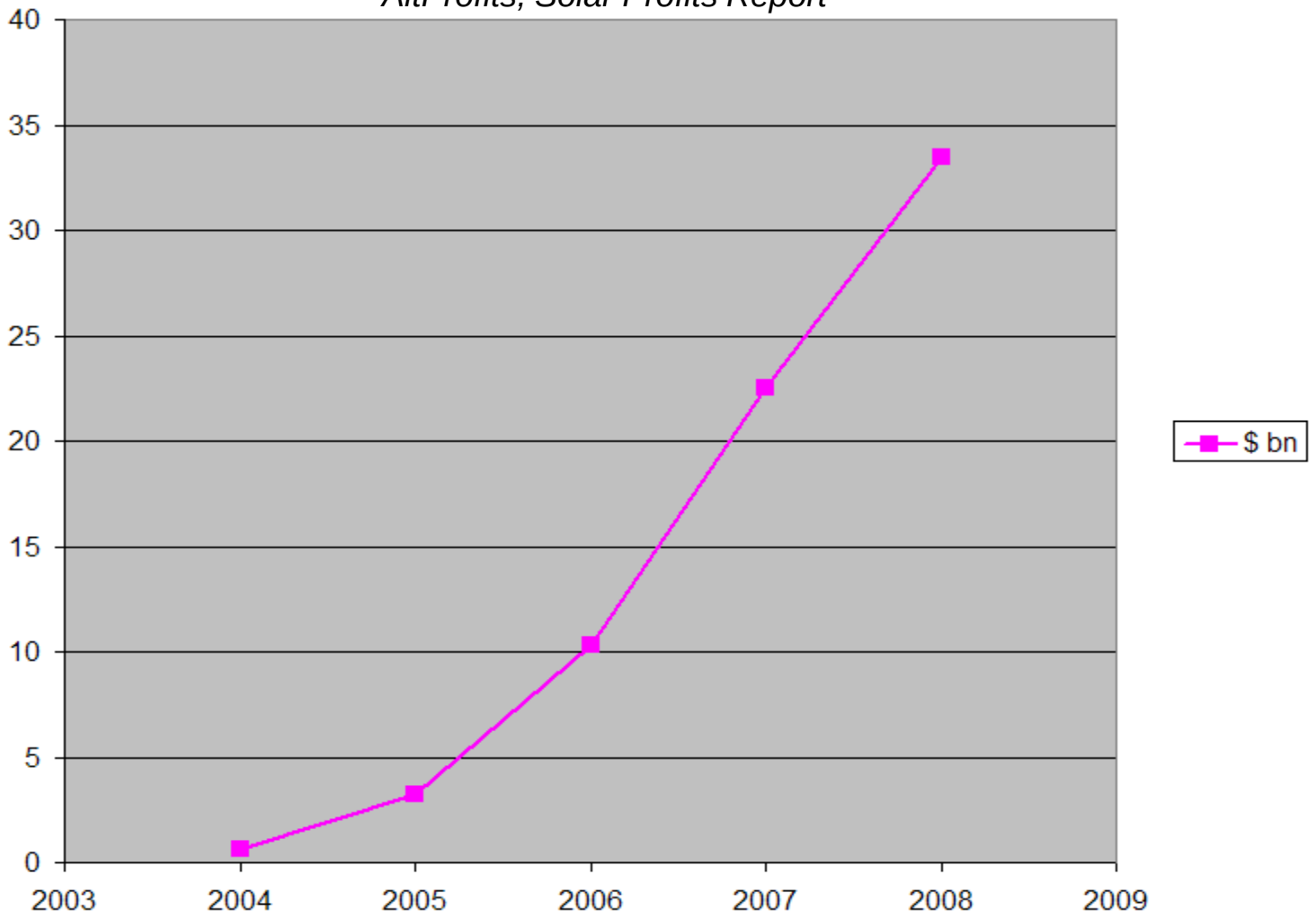
Global installed wind power



Source: World Resources Institute / IEA

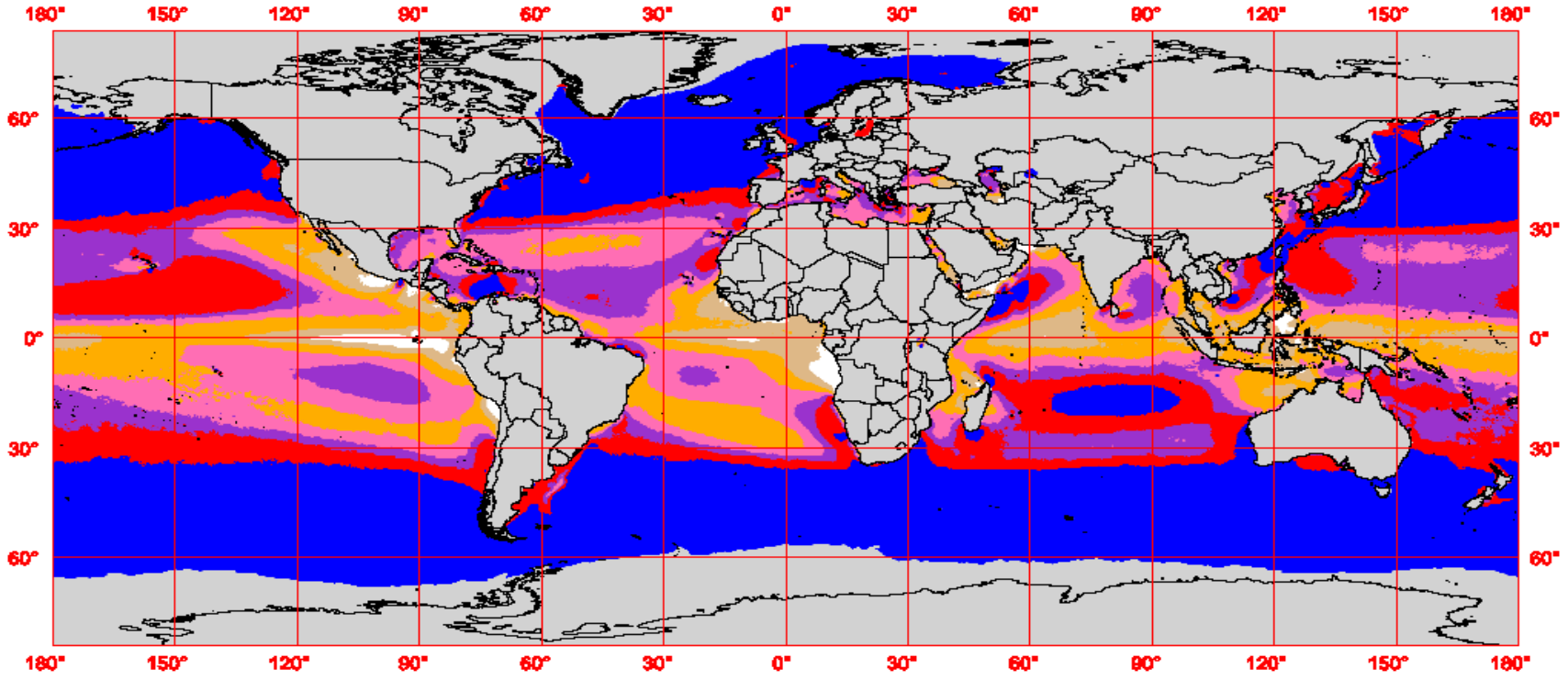
Global new investment in solar energy

- AltProfits, Solar Profits Report



France's nuclear company **Areva is to launch a solar power business** on the basis of the acquisition of US-based Ausra, a specialist in concentrated solar power.
- http://www.world-nuclear-news.org/indtalk.aspx 09 February 2010

QuikSCAT - Annual Wind Power Density at 50 m



Wind Power Classification

Wind Power Class	Resource Potential	Wind Power Density at 50m W/m²
1	Poor	0 - 200
2	Marginal	200 - 300
3	Fair	300 - 400
4	Good	400 - 500
5	Excellent	500 - 600
6	Outstanding	600 - 800
7	Superb	> 800

Scatterometer measurements of the state of the ocean surface are used to estimate 10-m ocean winds in the QuikSCAT satellite data set. The QuikSCAT data are produced by Remote Sensing Systems and sponsored by the U.S. National Aeronautics and Space Administration Ocean Vector Winds Science Team. Data are available at www.remss.com. NREL used a 5-yr average from 2000-2004 to produce the map. NREL applied a simple extrapolation to generate the 50-m estimates from the original 10-m QuikSCAT data

NREL has not validated the QuikSCAT satellite ocean wind estimates. NREL has observed that satellite-derived estimates of wind resource in near-shore, coastal, and island areas do not always agree with high-quality anemometer wind measurements. Therefore, satellite estimates in these areas should be compared with available wind measurements wherever possible.

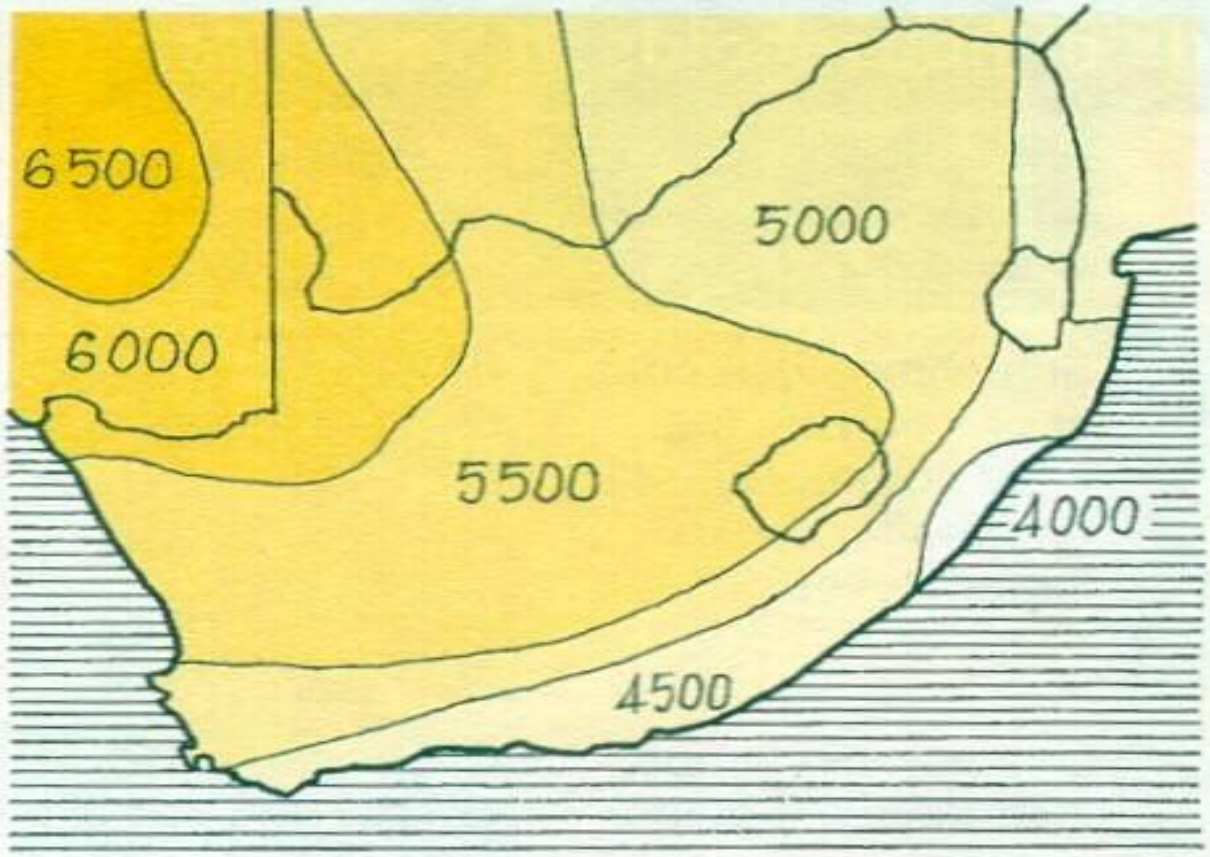
Solar and Wind Energy Resource Assessment

United Nations Environment Programme

Global Environment Facility

U.S. Department of Energy
National Renewable Energy Laboratory

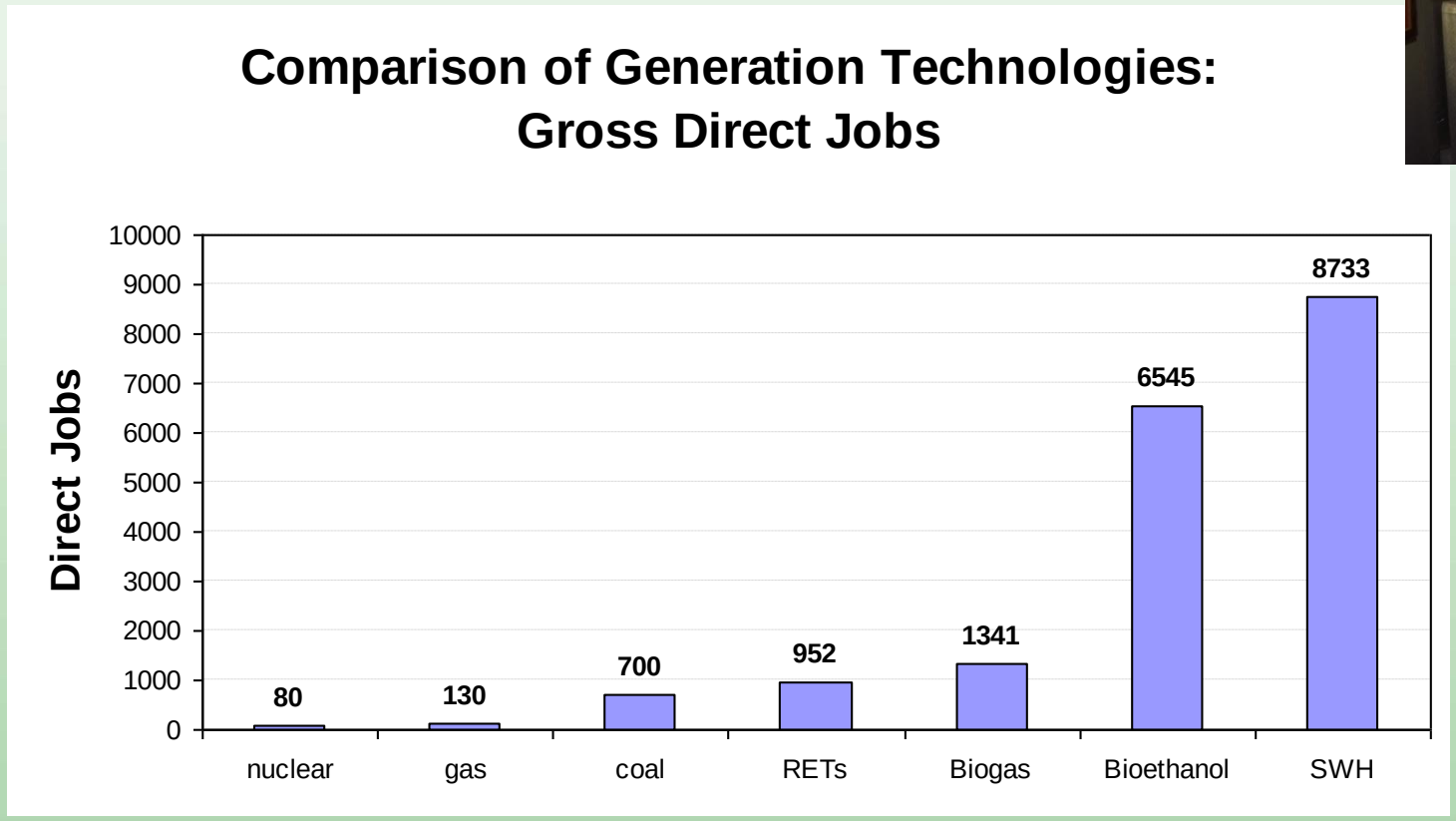
19-OCT-2005 1.4.00



Annual average radiation in watt hours per square metre per day.

Solar potential in South Africa

Jobs for Africa?



Renewable Energy creates **25% more** jobs than coal.

Renewable Energy creates **90% more** jobs than nuclear

Ref: Employment Potential of Renewable Energy in South Africa, --
-SECCP, 2003
-Agama Energy, 2003

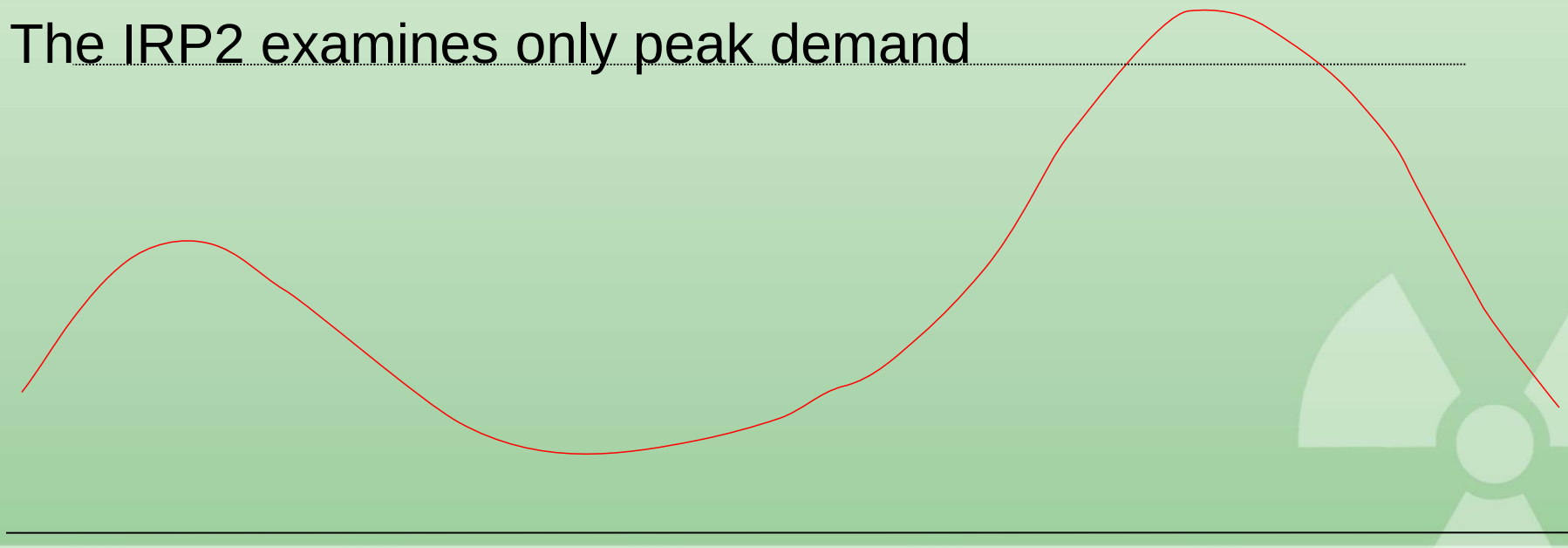
Missing Information

Daily demand curve

Energy demand is not constant over a 24 hour cycle.

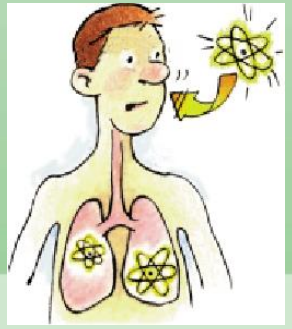
Examination of the daily demand curve would allow mechanisms to ‘shift the peak’.

The IRP2 examines only peak demand



Summary

- No modeling of cost of waste handling facility
- No modeling of ‘strong probability’ of nuclear cost being higher than assumed
- No modeling of costs of nuclear accident or leak
- No modeling of increased security costs
- No modeling of impact of shorter than predicted plant lifetimes
- No modeling of daily electricity demand curve, and daily price elasticity



WE REJECT THIS DRAFT AS INCOMPLETE