

Nuclear Energy Renaissance

Addressing Challenges of Climate Change and Sustainability

Climate change:
**Nuclear Energy
is not the Answer**

Nikos Charalambides

IEA 2004 reference senario

ENERGY REVOLUTION

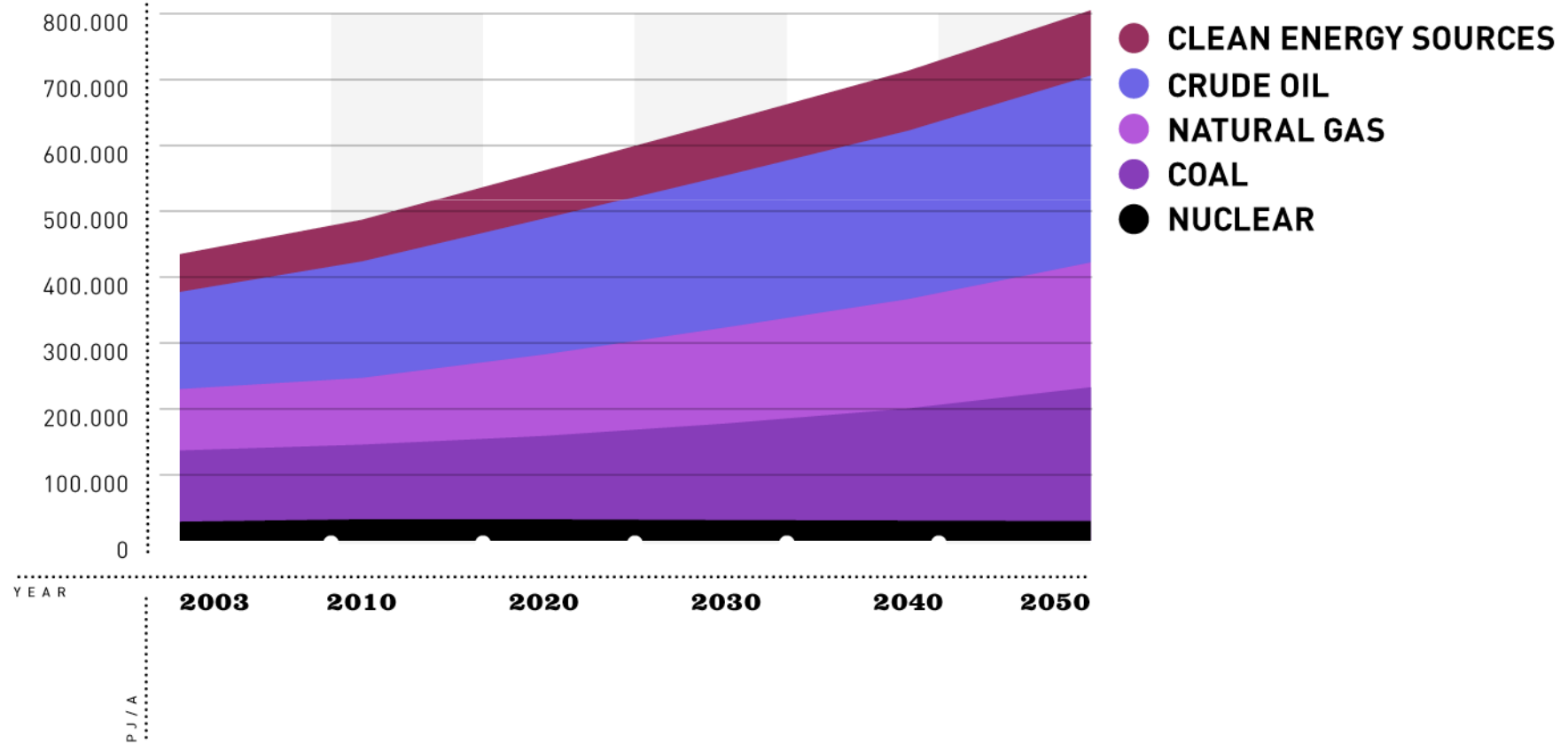
Commissioned by EREC – Greenpeace
from the Department of Systems Analysis
and Technology Assessment at the
German Aerospace Centre

ENERGY REVOLUTION

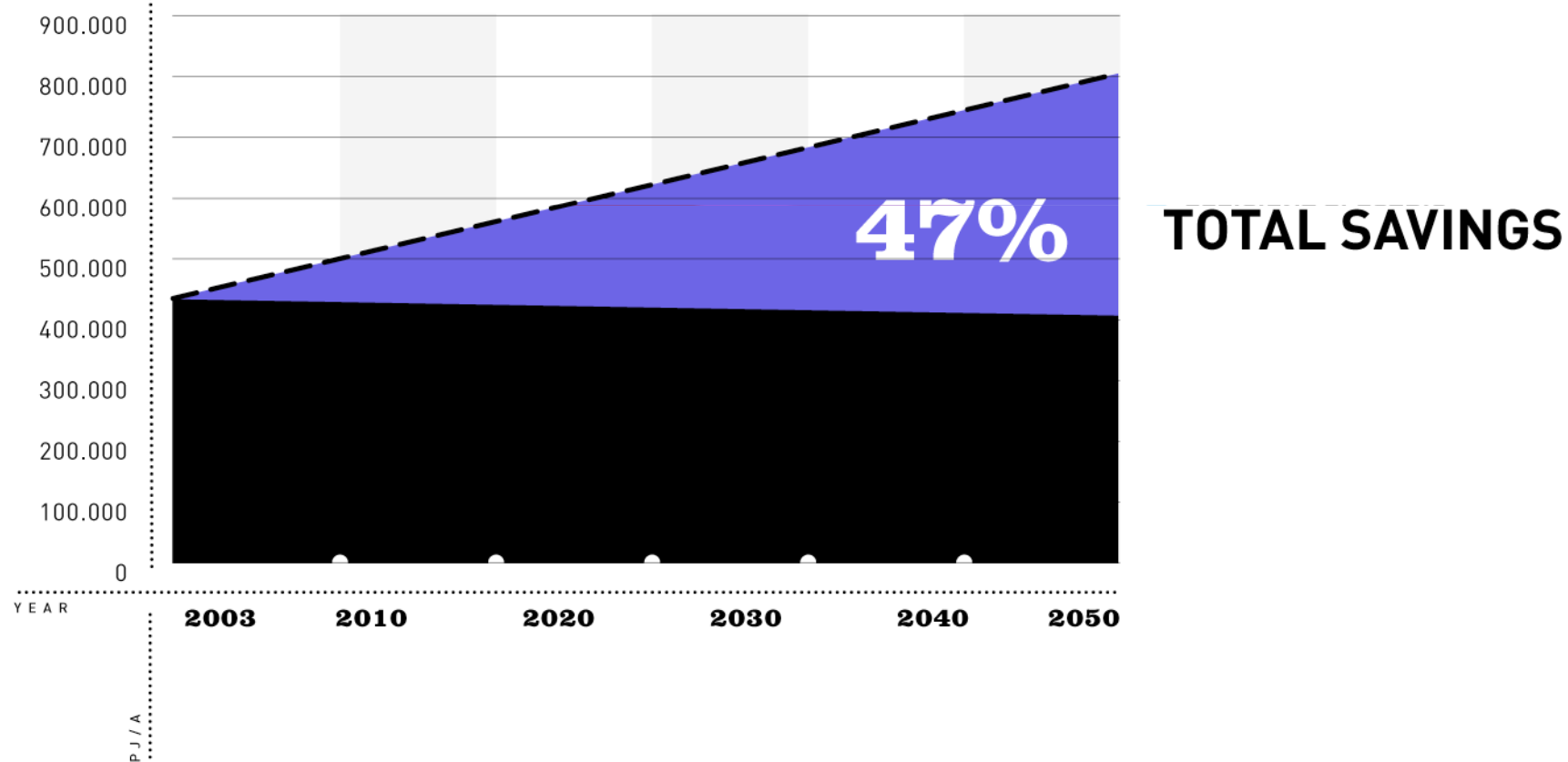
Energy supply scenarios adopted in the
ER report calculated using
MESAP/PlaNet simulation model
further developed by the Ecofys
consultancy

Reference scenario

world primary energy demand



Final energy demand



primary energy demand

energy revolution

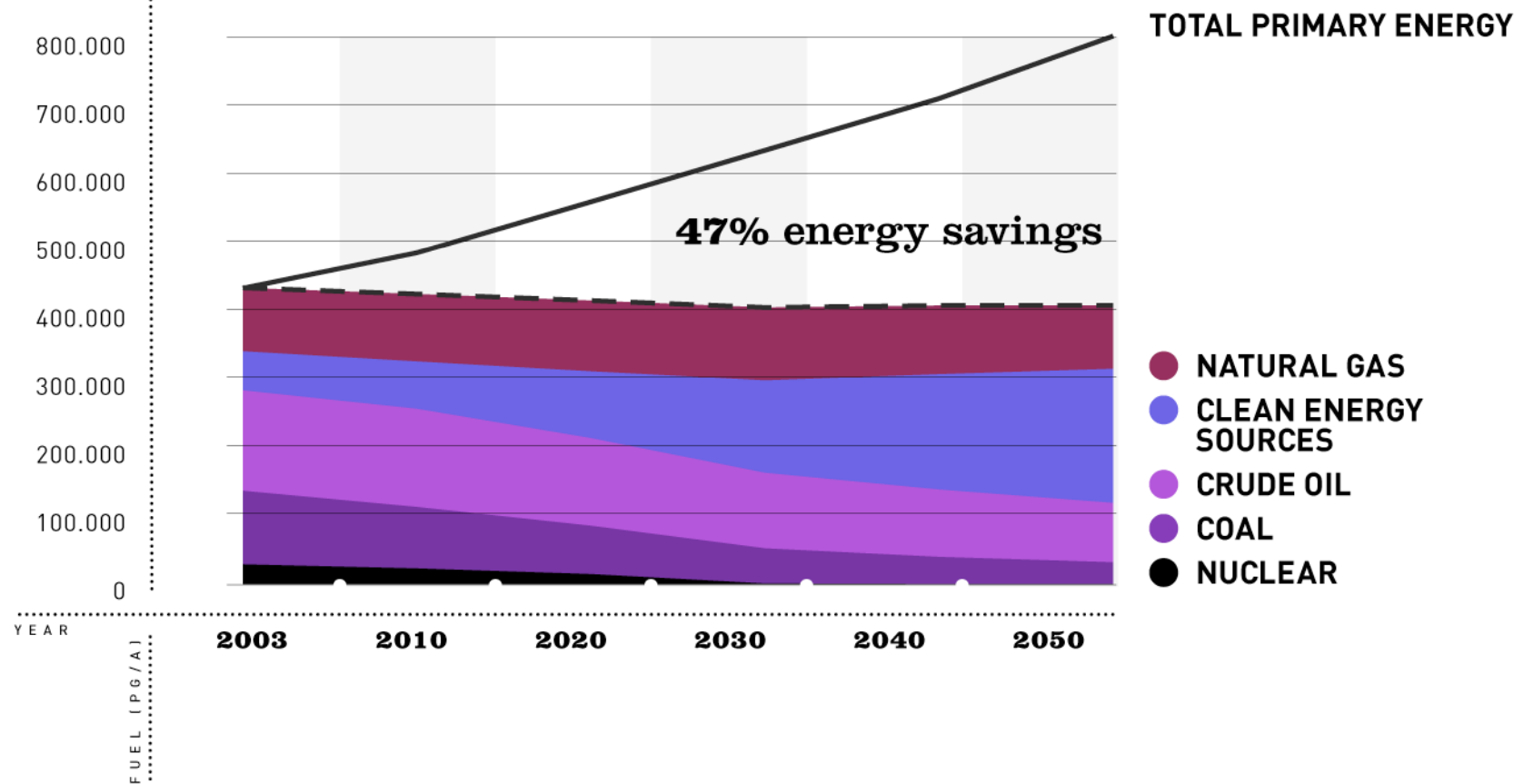


figure 30: energy resources of the world

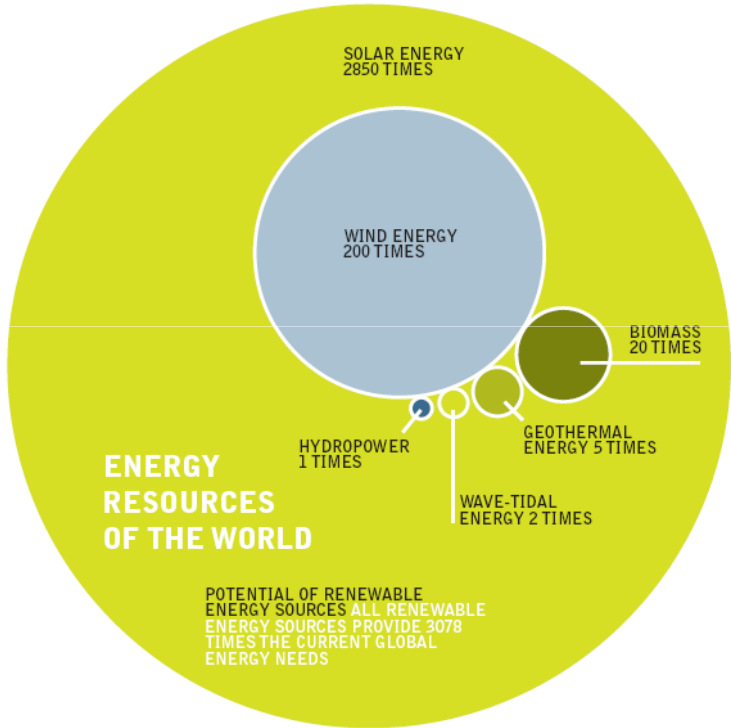


table 12: technically accessible today

THE AMOUNT OF ENERGY THAT CAN BE ACCESSED WITH CURRENT TECHNOLOGIES SUPPLIES A TOTAL OF 5.9 TIMES THE GLOBAL DEMAND FOR ENERGY.

Sun	3.8 times
Geothermal heat	1 time
Wind	0.5 times
Biomass	0.4 times
Hydrodynamic power	0.15 times
Ocean power	0.05 times

source DR. JOACHIM NITSCH

figure 1: development of primary energy consumption under the energy [r]evolution scenario

('EFFICIENCY' = REDUCTION COMPARED TO THE REFERENCE SCENARIO)

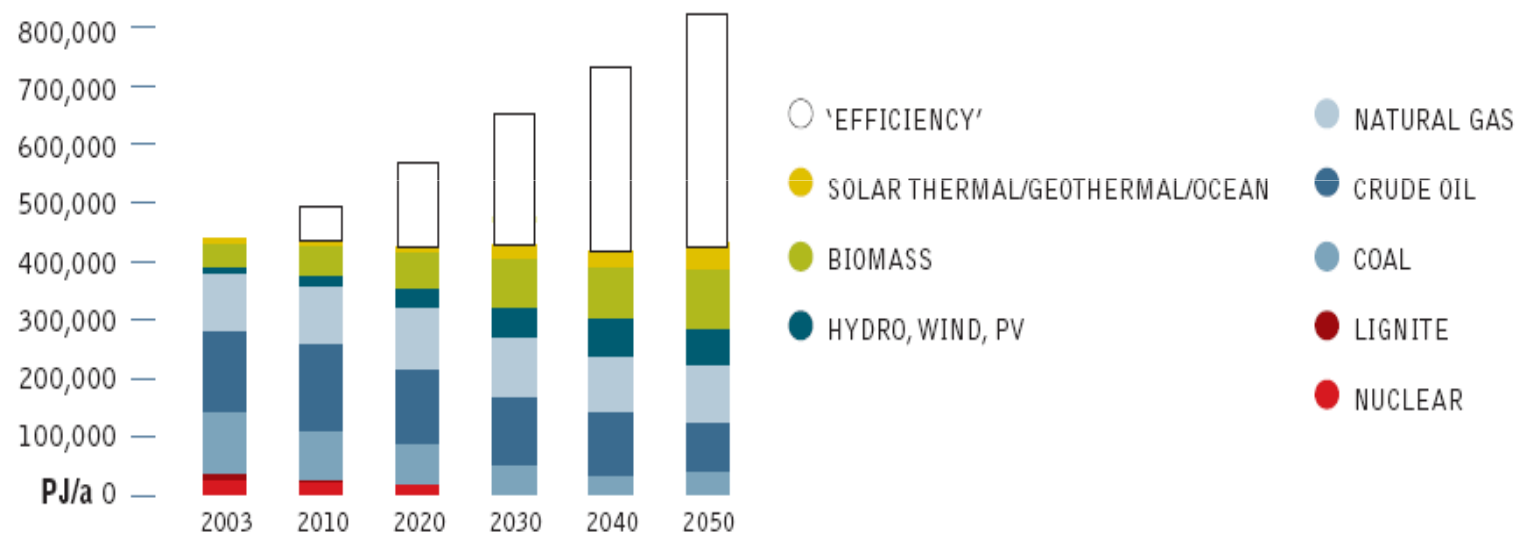


figure 22: OECD europe: growth of final renewable electricity supply under the energy [r]evolution scenario, by source

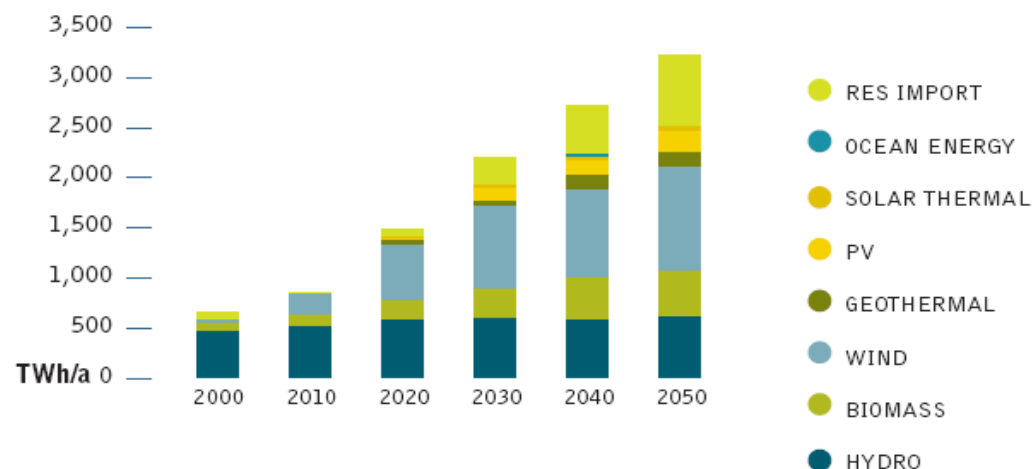
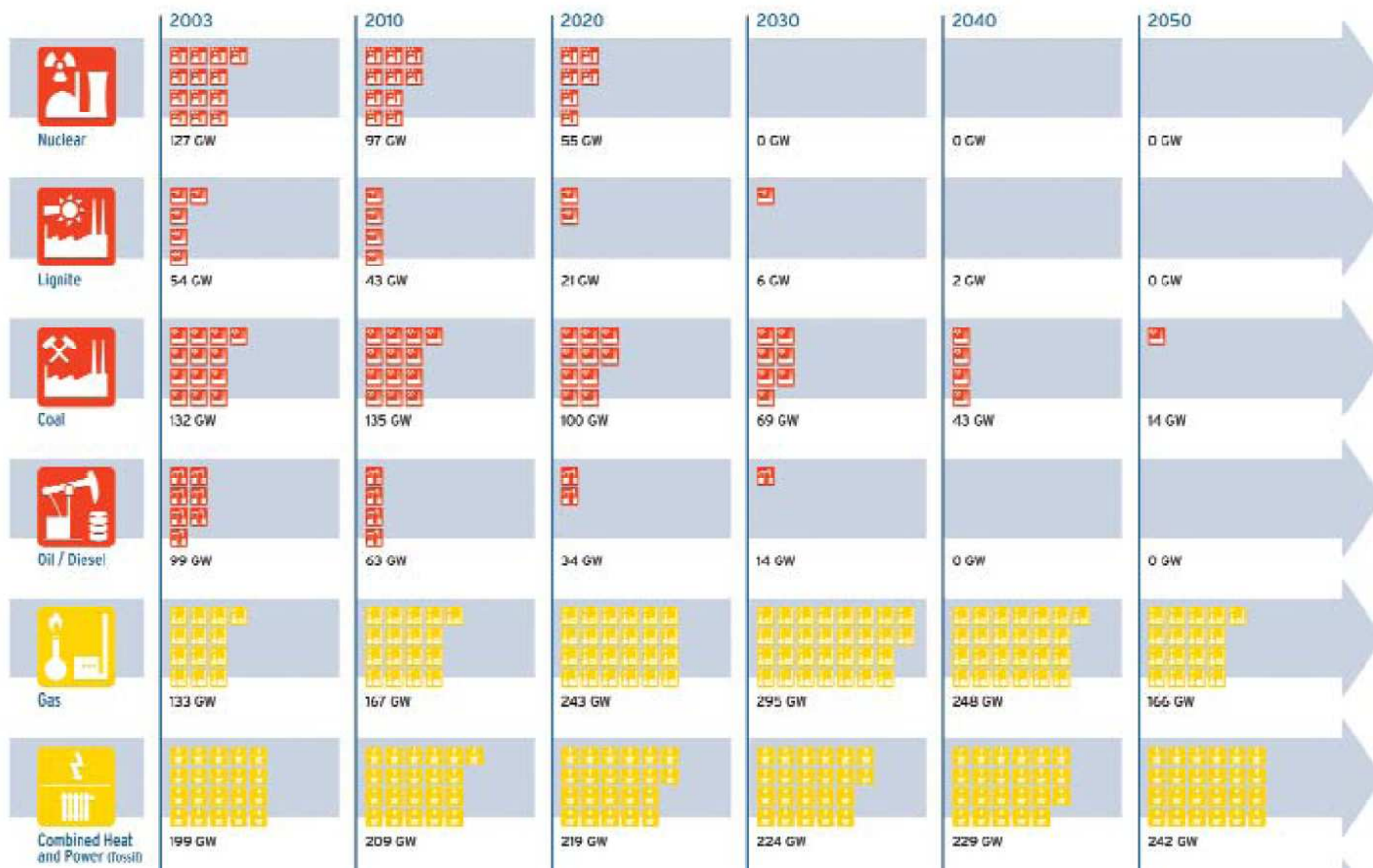
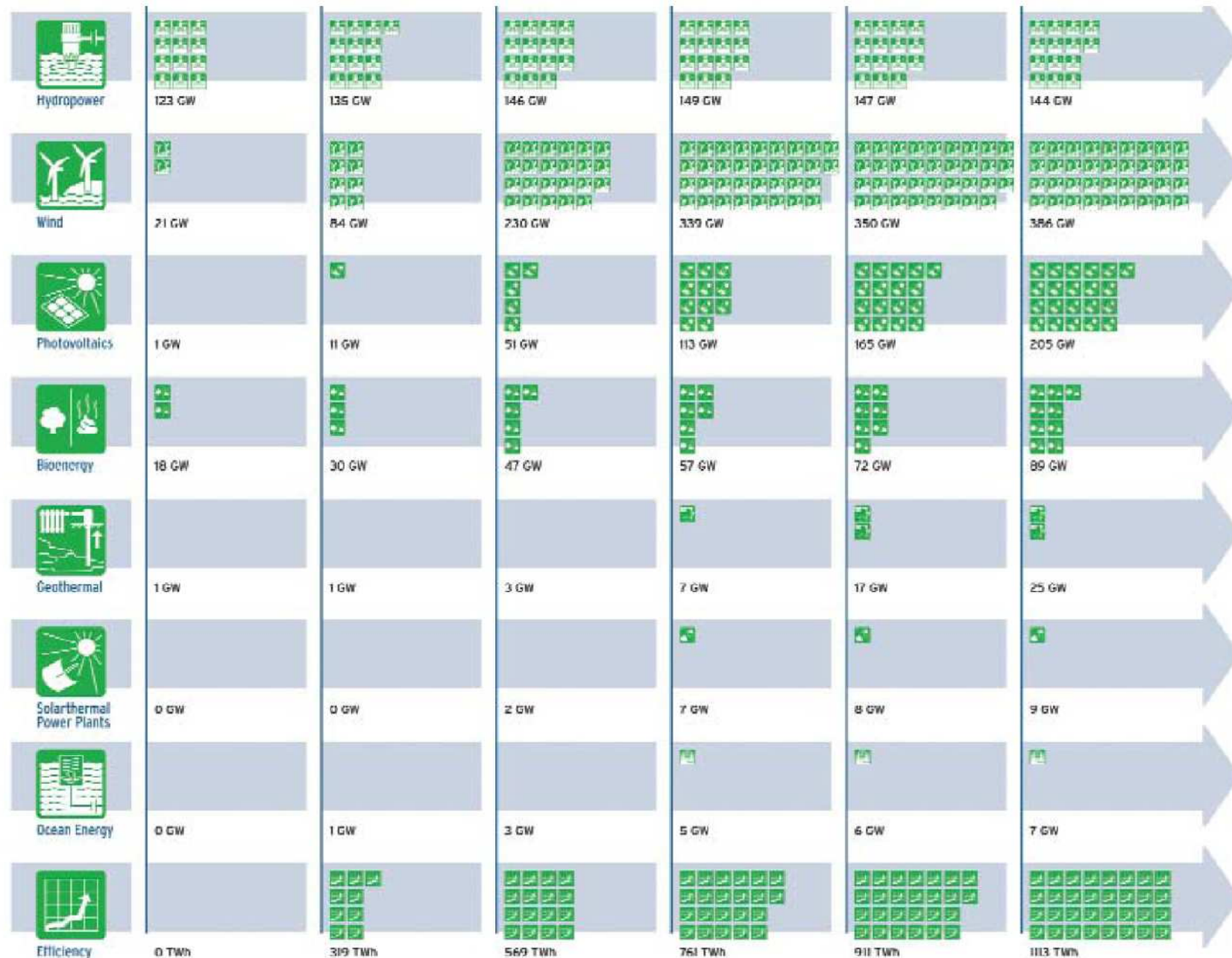


table 7: OECD europe: projection of final renewable electricity generation capacity under the energy [r]evolution scenario

IN MW	2003	2010	2020	2030	2050
Hydro	123,000	135,000	146,000	149,000	144,000
Biomass	18,000	30,000	47,000	57,000	89,000
Wind	21,000	84,000	230,000	339,000	386,000
Geothermal	1,000	1,000	3,000	7,000	25,000
PV	1,000	11,000	51,000	113,000	205,000
Solarthermal	0	0	2,000	7,000	9,000
Ocean energy	0	1,000	3,000	5,000	7,000
Total	164,000	263,000	482,000	677,000	865,000

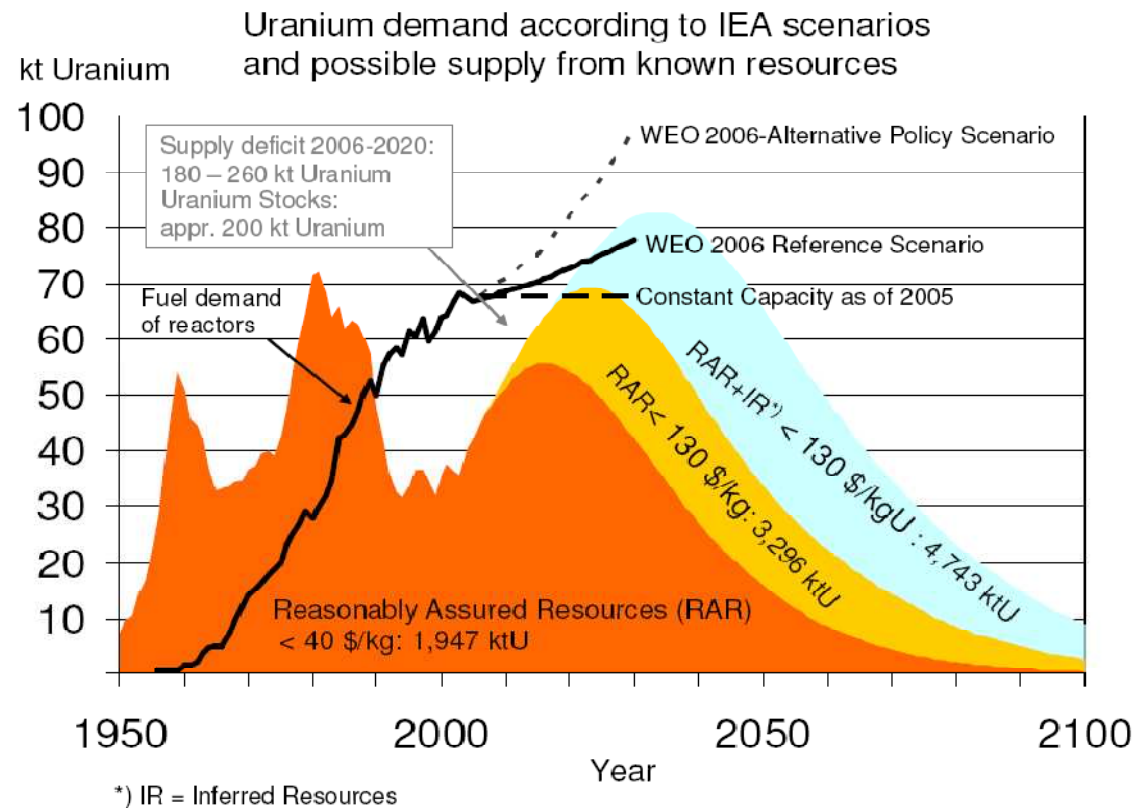




Note: All data are rounded to the nearest thousand

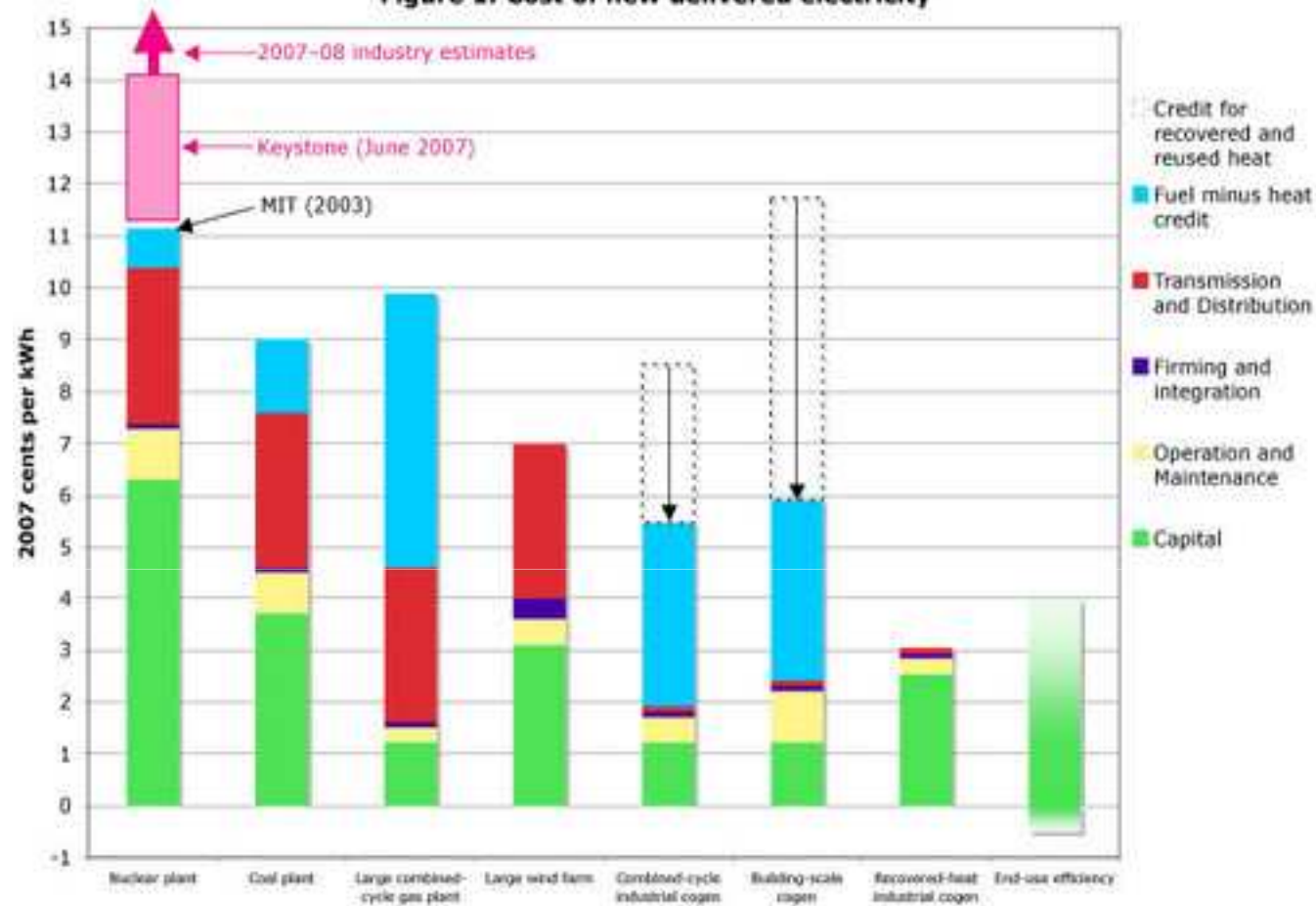
Nukes is the answer
(or a part of it)?

Figure: Past and projected uranium production. Forecasts are based on reasonably assured resources below 40 \$/kgU (red area), below 130 \$/kgU (orange area) and additionally including inferred resources. The black line shows the fuel demand of reactors currently operating together with the latest scenarios in the World Energy Outlook (WEO 2006) of the International Energy Agency.

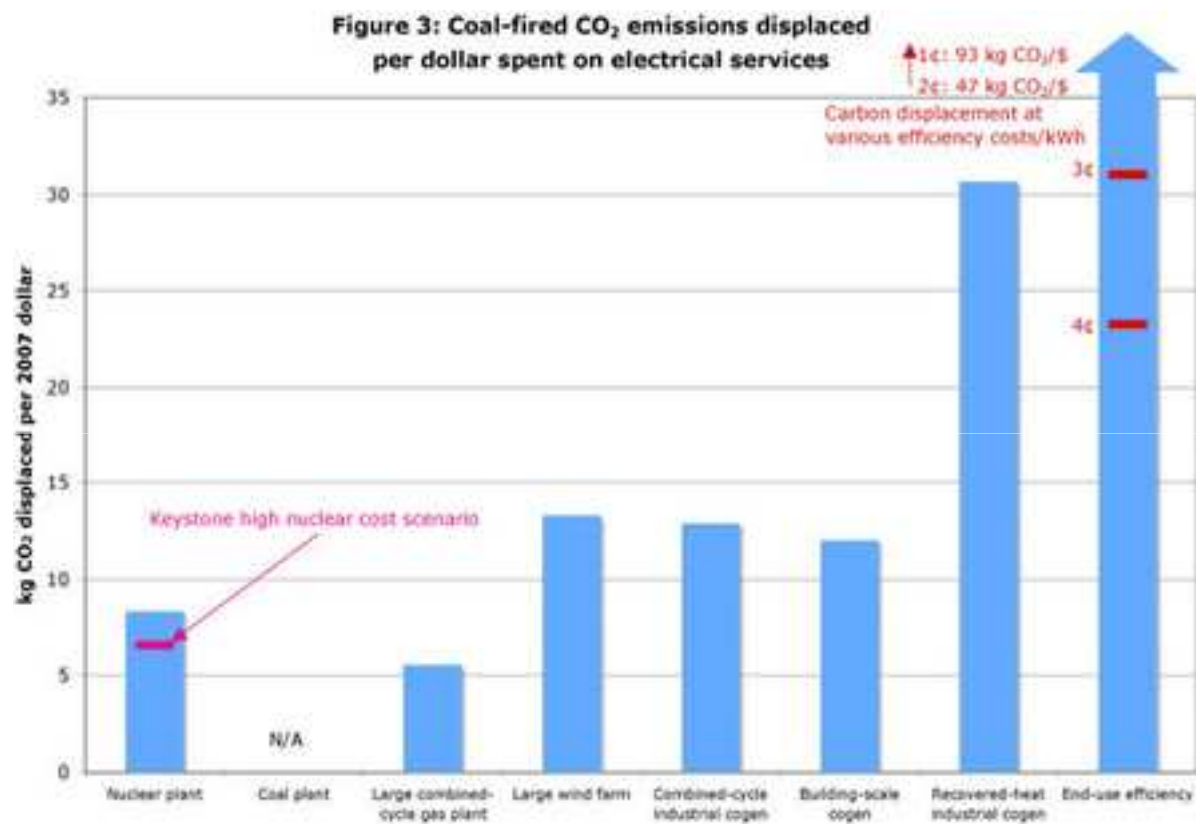


Energy Watch Group, December 2006

Figure 1: Cost of new delivered electricity



“Forget Nuclear”, by Amory Lovins, Imran Sheikh, Alex Markevich
Rocky Mountain Institute, April 2008



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