



# PV & Zero-Energy in NL

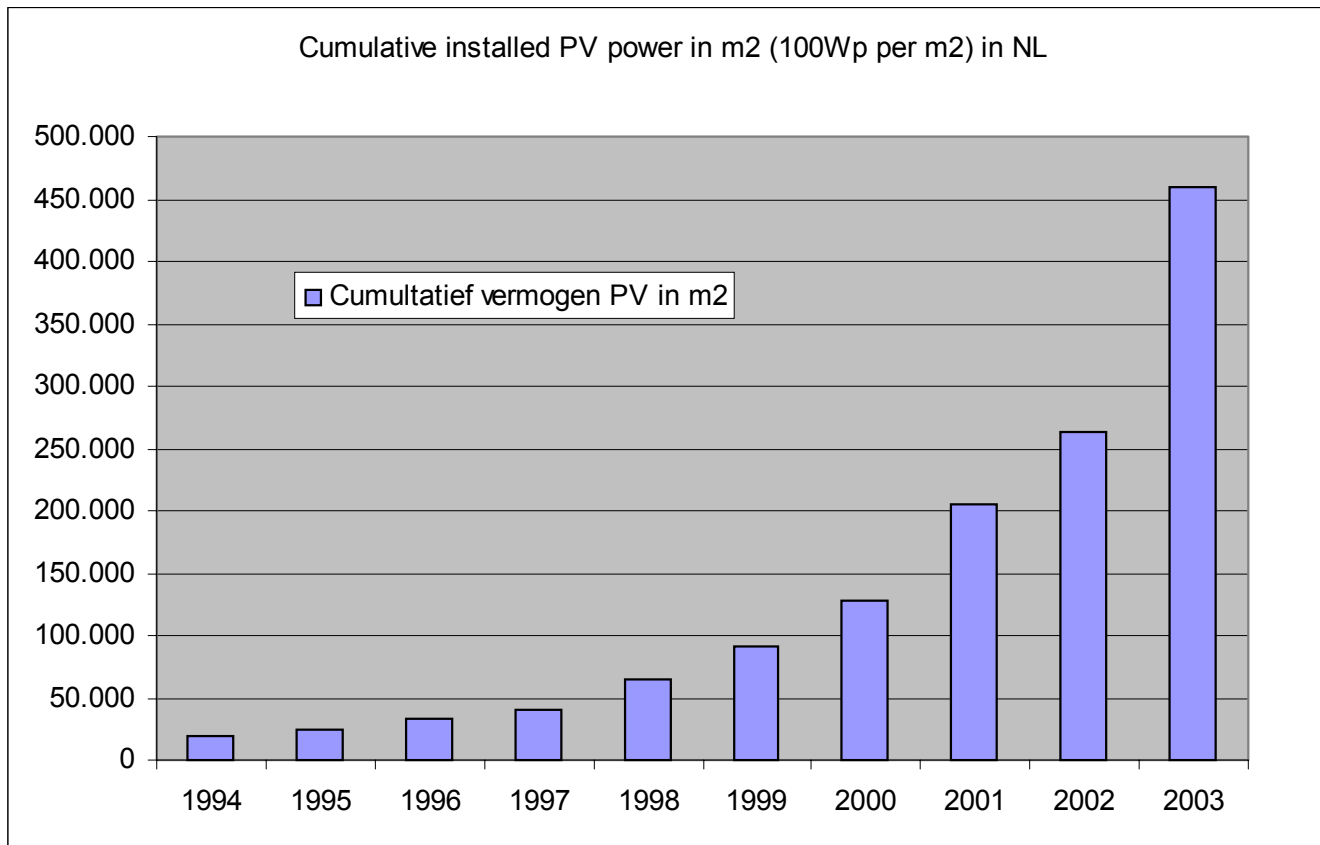
---

Emil ter Horst  
Horisun, Utrecht

Symposium "Nieuwe Energie in Uitvoering,  
3rd November, 2004  
[eth@horisun.nl](mailto:eth@horisun.nl)

Thanks to: IEA-PVPS Task 1 & 10

# PV power 1994-2003



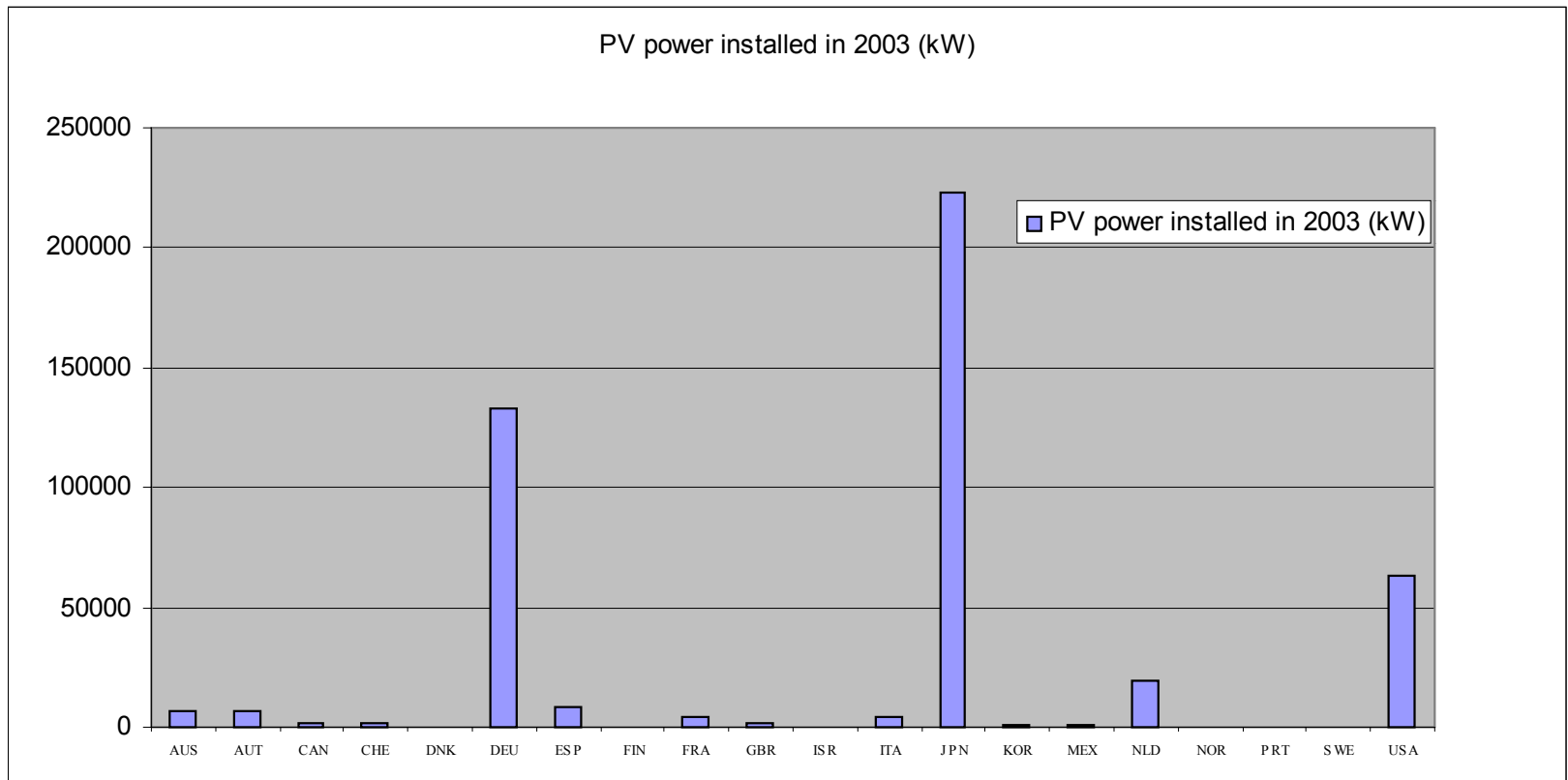


## PV roofs 1991-2004

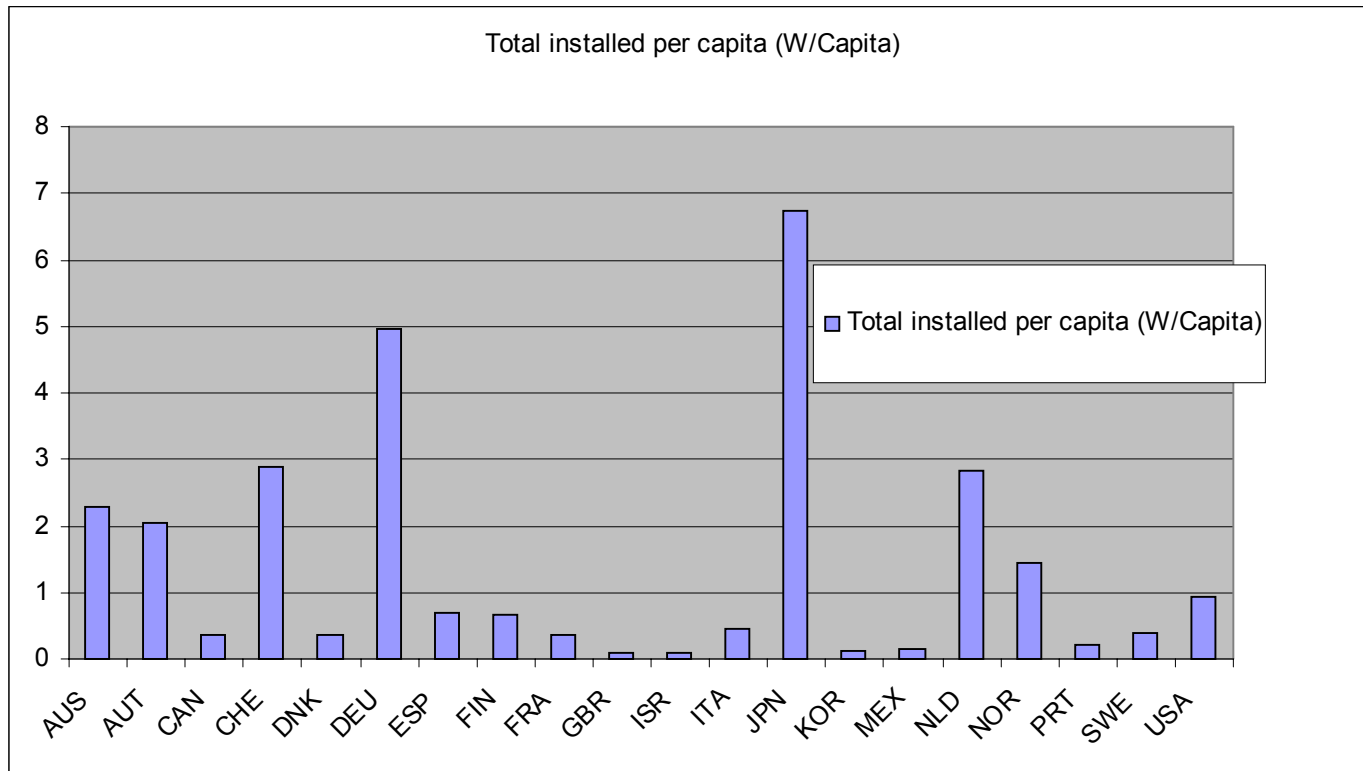
---

- '91: 10 pv roofs €1600 per m<sup>2</sup>/100Wp
- '95: 200 pv roofs €800 per m<sup>2</sup>/100Wp
- '00: 4000 pv roofs €550 per m<sup>2</sup>/100Wp
- '04: 20a80.000 pv roofs: 450.000m<sup>2</sup>

# NL versus OECD 2003



# PV power per capita 2003





# Zero-Energy 1991-2004

---

(seventies – Castricum 1989)

- '93: E-0 house Woubrugge
- '97: two E-balance houses Amersfoort
- '97-'03: ~100 E-0 or zero-emission houses in Etten-Leur, Leeuwarden, ..
- 2004: 1st zero-emission district in the world in Heerhugowaard
- In de nota Apeldoorn Duurzaam is de ambitie neergelegd dat Apeldoorn in 2020 een **energieneutrale** stad wil zijn.



# Prognoses 2004-2020

---

- 2004: 1st E-0 district
- 2010: 250 MWp (~200.000 pv roofs)
- 2010: E-0 districts feasible
- 2020: 1.000.000 zonnedaken /sunroofs
- 2020: first E-0 municipalities/cities