



Breakthrough Solar-PV in the Netherlands

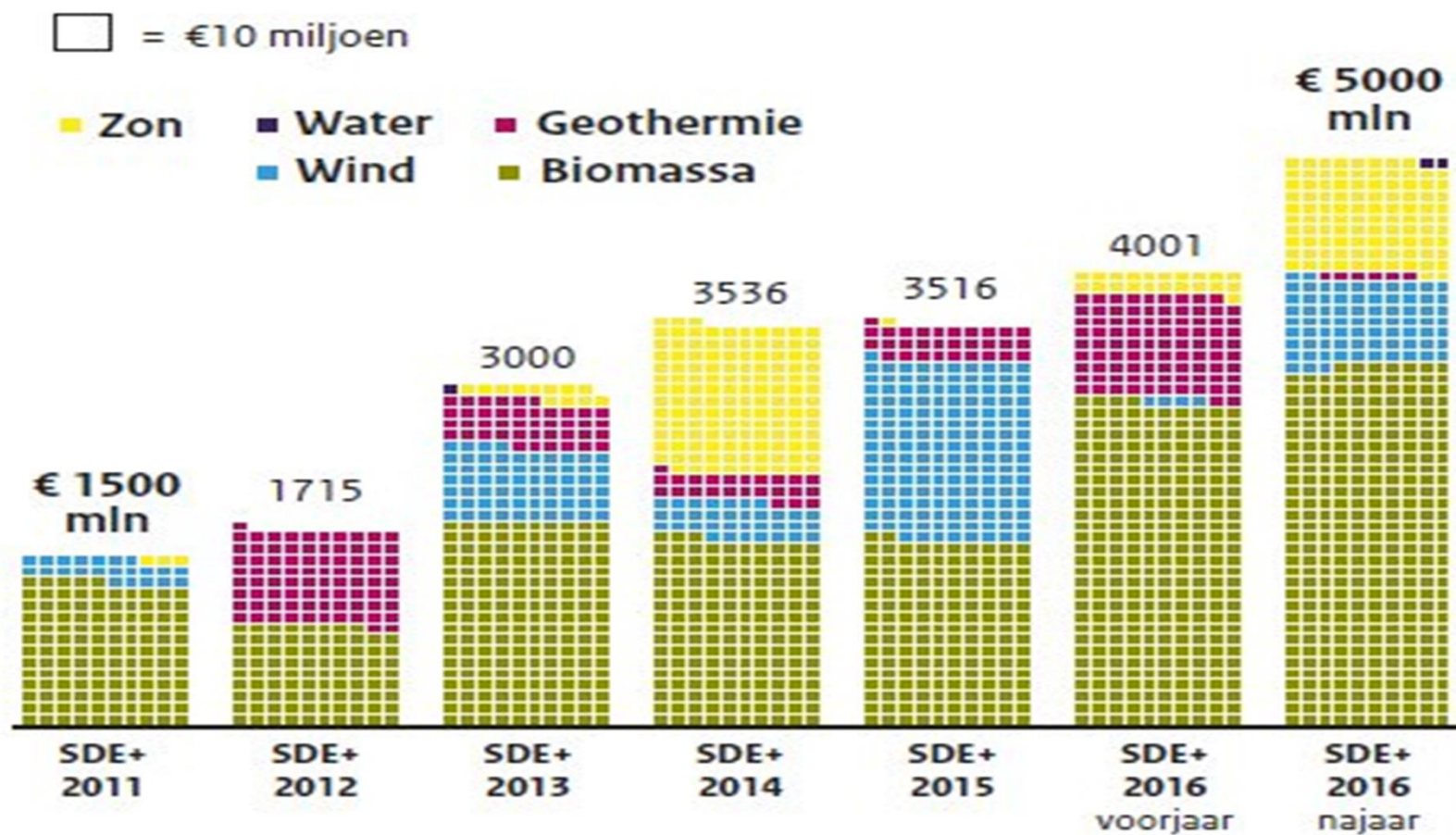
Sunday, november 2017

Jaap Baarsma, president Holland Solar






SDE+ subsidies vanaf 2011 (excl. offshore wind)





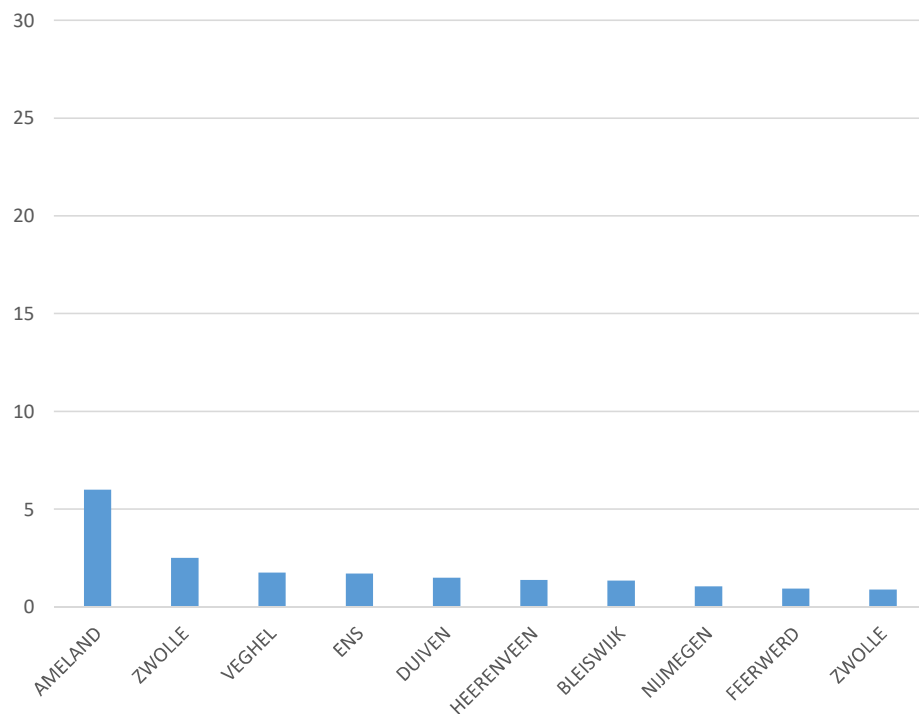
Gamechangers PV in 2016

- PV has become competitive compared with other renewables
 - Awareness of the need for large PV-installations
 - Increasing SDE+ budgets
 - Low financing costs
 - Biomass co-firing has reached the appointed maximum
 - Wind on land have difficulties in acceptance by the citizens
 - No easy possibilities for geothermal energy in The Netherlands
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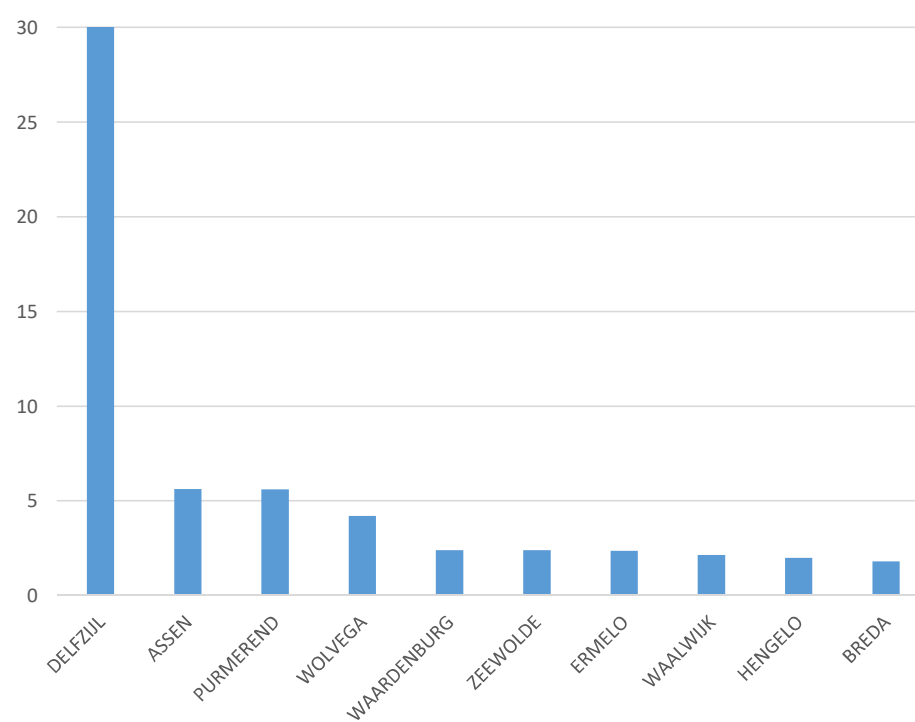
Realization PV-projects 2015/2016



10 largest PV-projects 2015 (MWh)



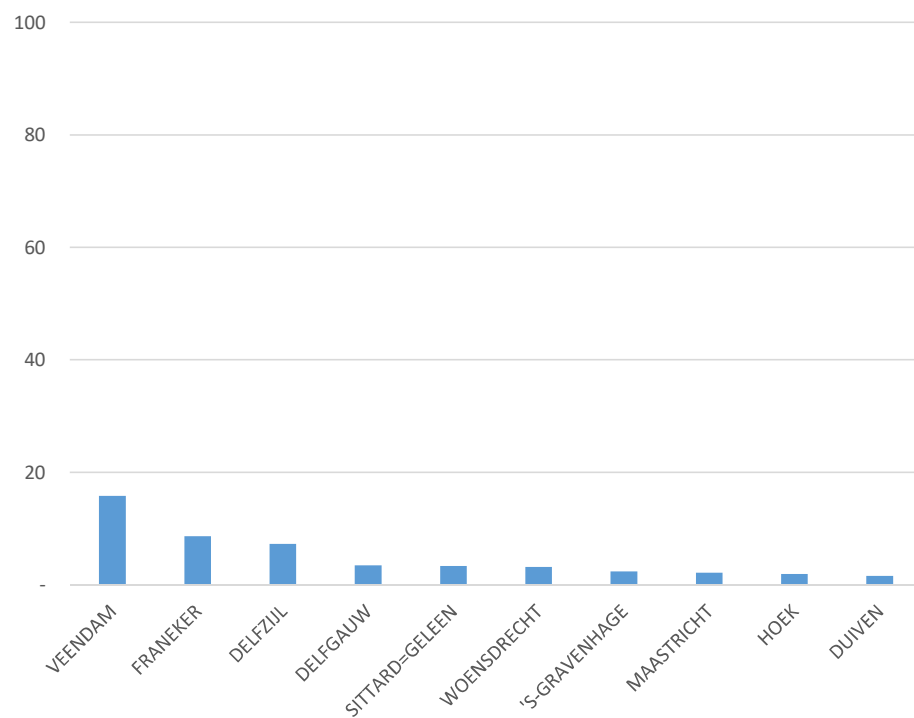
10 largest PV-projects 2016 (MWh)



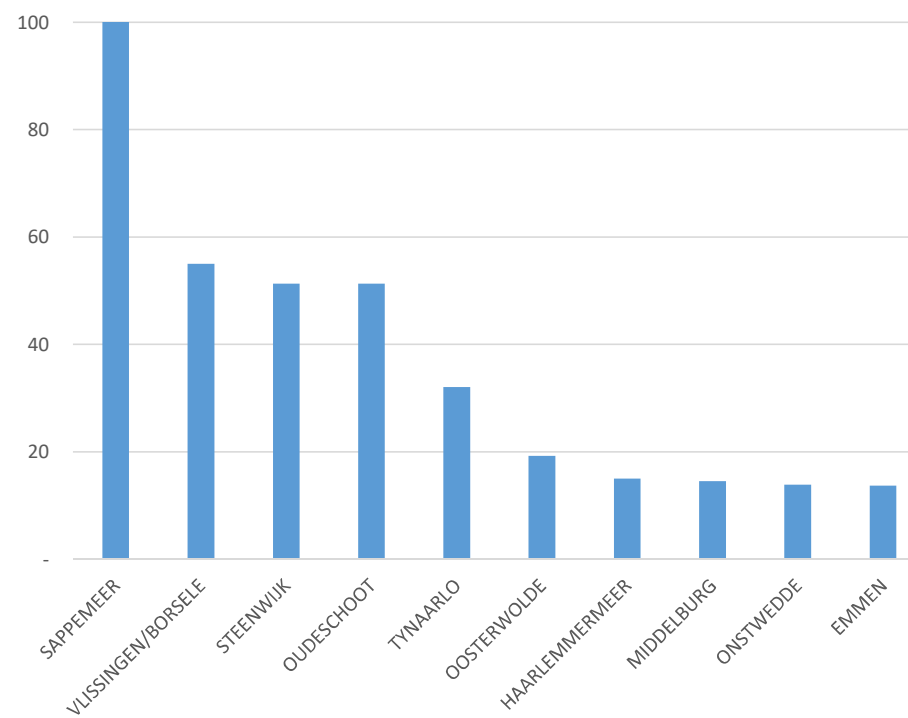
PV applications 2016



Zon-PV voorjaar 2016 (MWp)



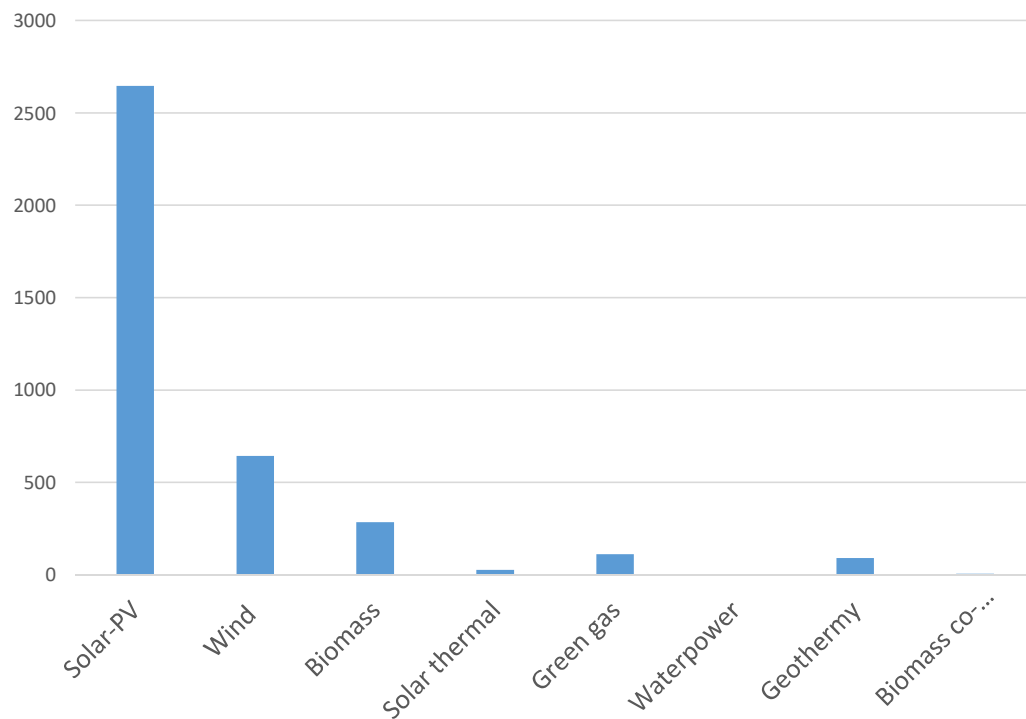
Zon-PV najaar 2016 (MWp)



SDE+ applications 2017 first half

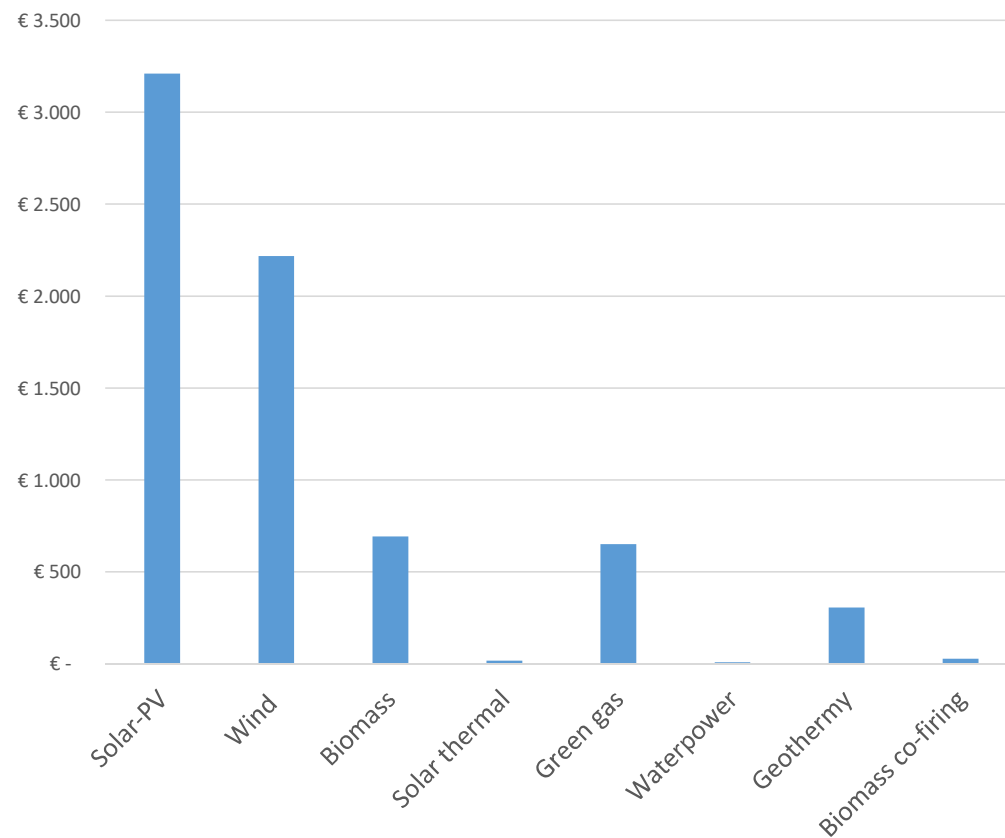


SDE+ applications Maximum Power (MW)



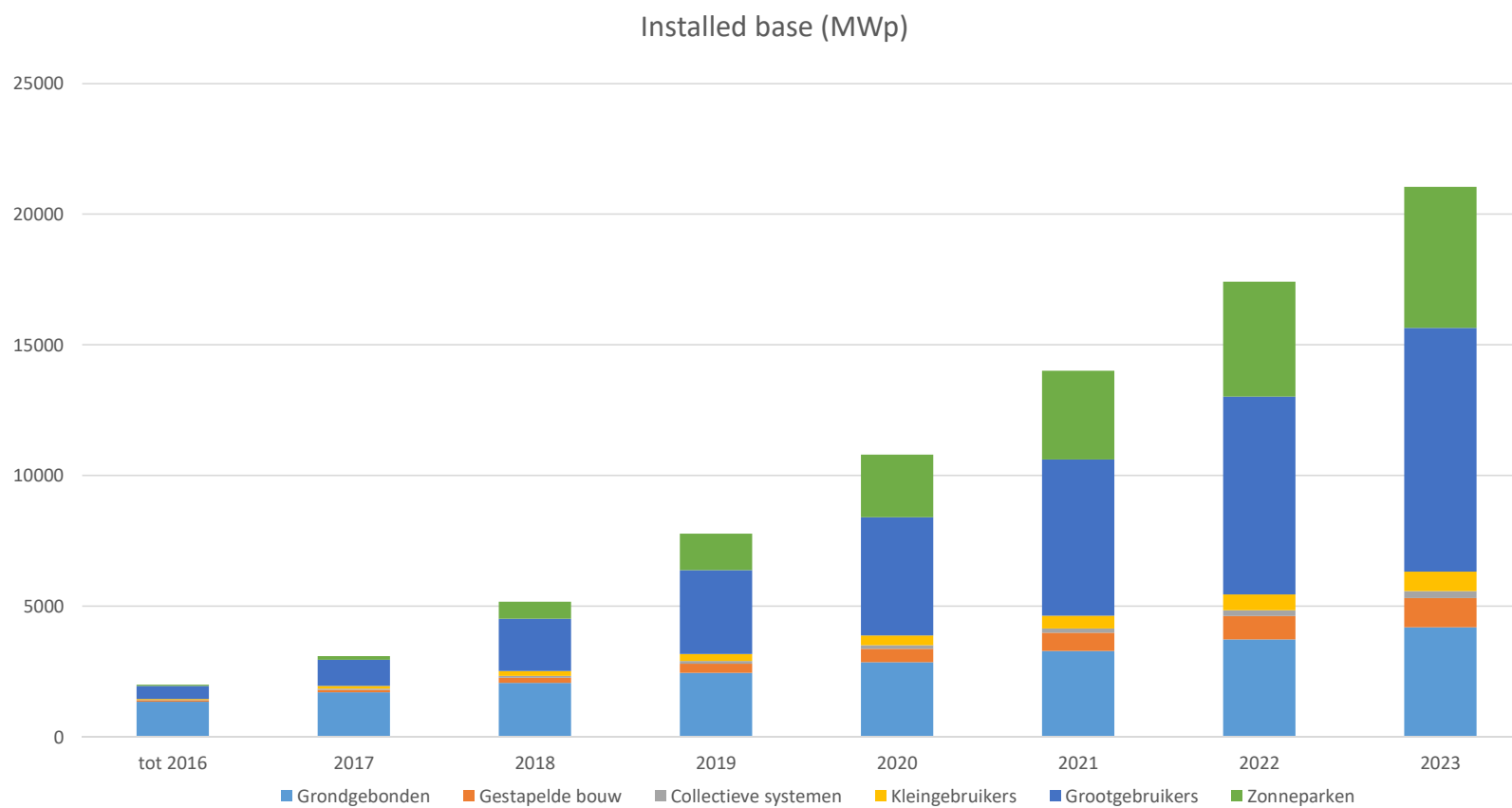
SDE+ applications 2017 (€Mio)

(total 7€B, budget 6 €B)



Installed base PV up to 2023

ambition Holland Solar





Challenges

- Intelligent use of roofs (fast introduction of BIPV)
- Spatial planning and multi-functional use of space
- Use of water areas
- Flexibility and storage for short term balancing
- Combination solar-wind-biomass in seasonal balancing
- Adaptation electricity network to decentralized production
- Skilled labour