

# South African Solar Energy Perspectives

6 December 2011



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# Agenda<sub>2</sub>

- Solar Energy in South African Context
- What are our most attractive solar possibilities
- Barriers to deploying various solar technologies
- How we intend to overcome the barriers
- Conclusions

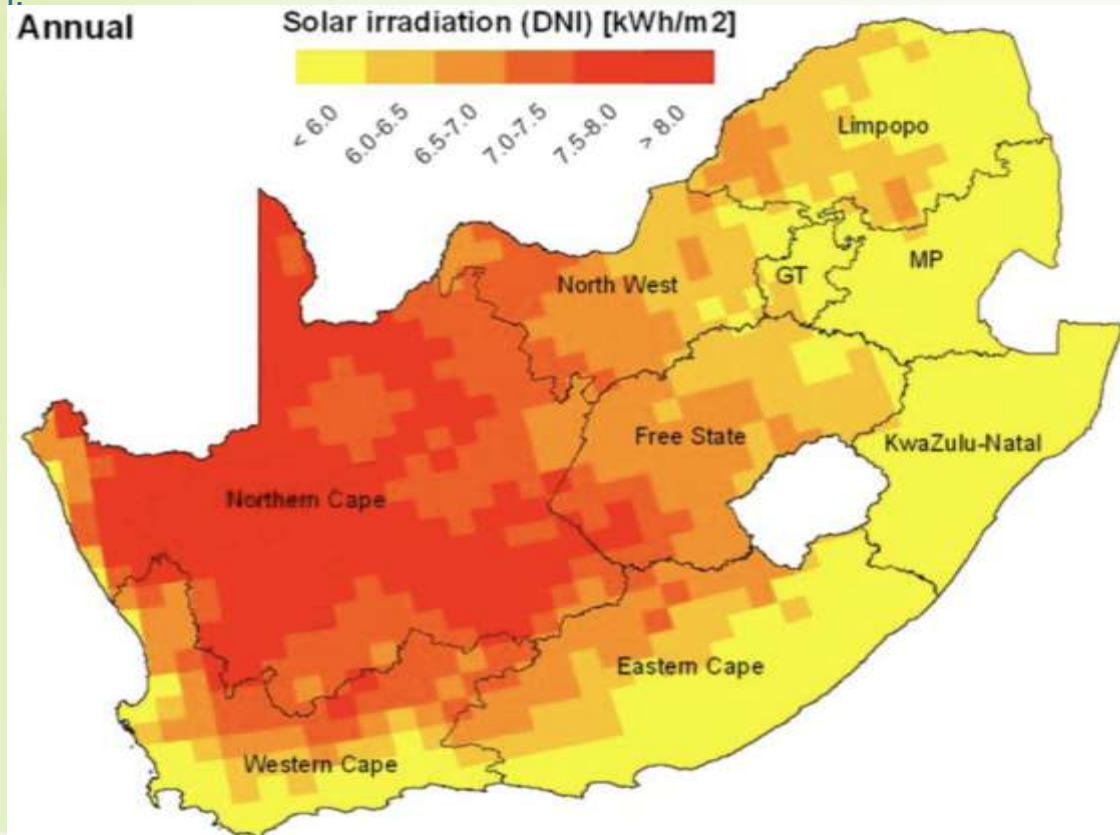


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# South African Solar Resource

- South Africa's solar resource is amongst the best in the world, making it an ideal location for solar power generation with Northern Cape highlighted with highest solar irradiation.



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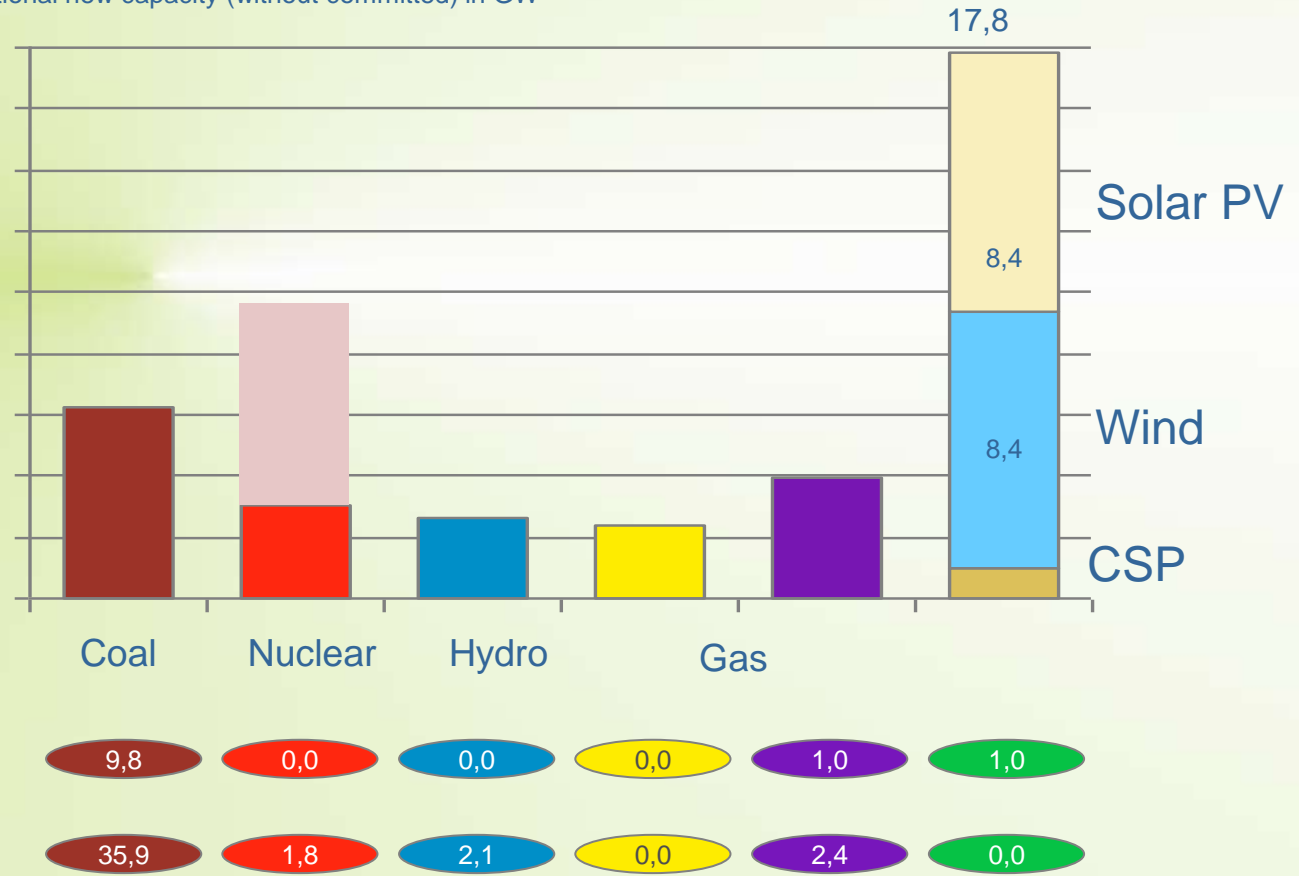


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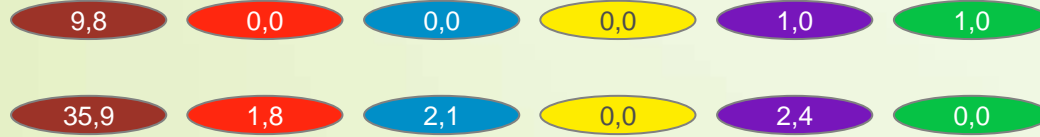
# (1) Solar Aspiration in the IRP

Additional new capacity (without committed) in GW



Committed new builds

Existing fleet (2010)

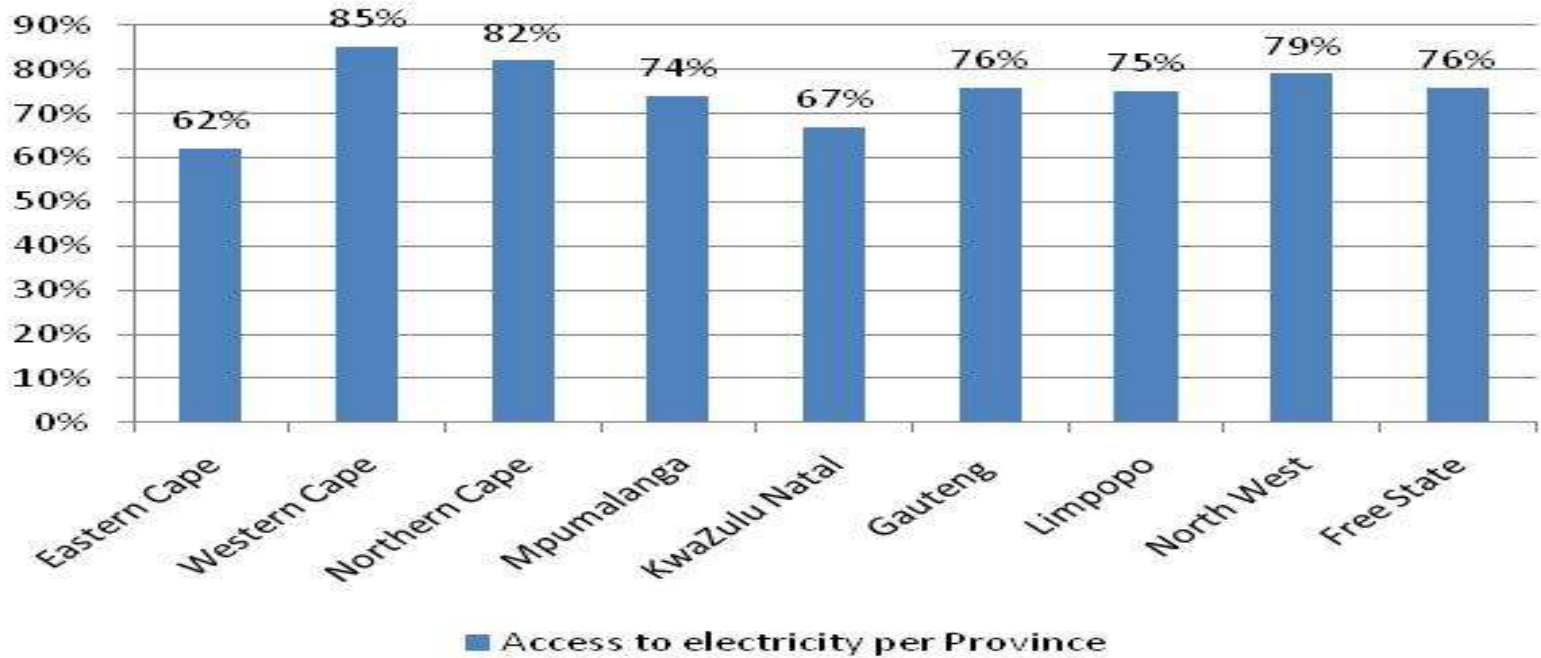


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## (2) Access to Energy–Solar Home Systems

**Access to electricity per Province**



The above graph highlights the challenge of grid-based energy access

EC and KZN are lagging behind partly because of the terrain and difficulty in accessing rural areas.

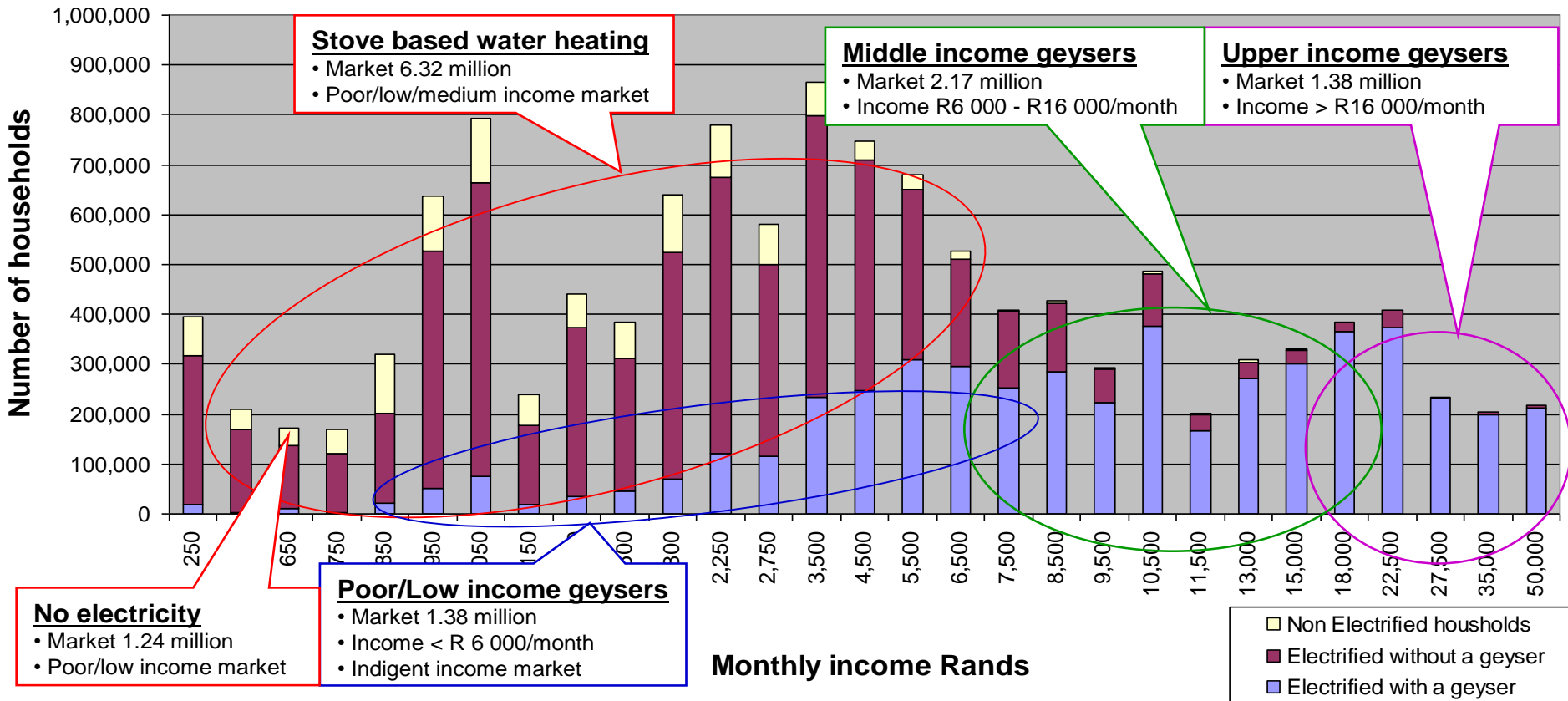
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# (3) Solar Water Heating – Market Segments



## Households number vs Income levels

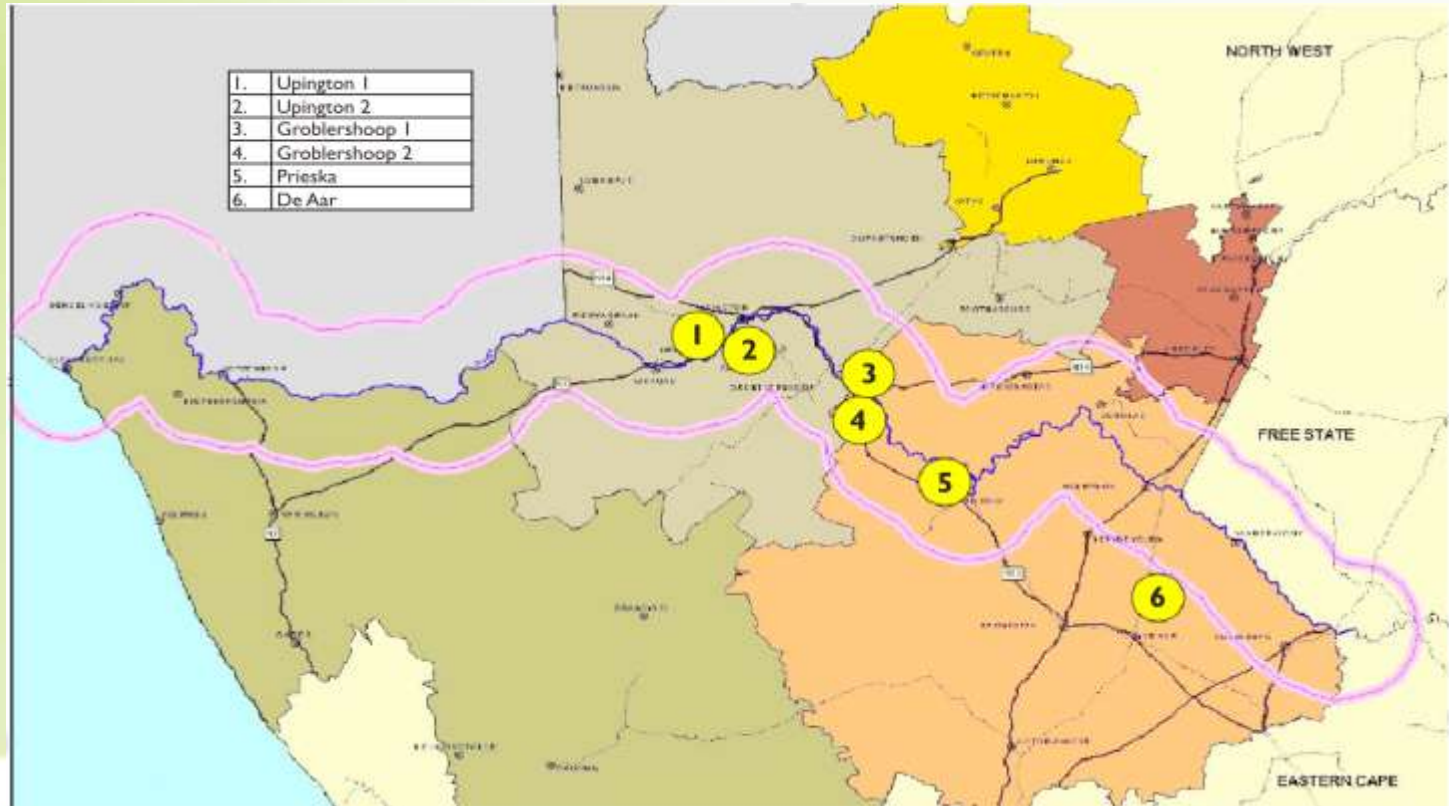


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# (4) Solar Park Concept - Potential Areas

- A 5 GW Solar Park would require between 15,000 and 19,000 hectares of land. This land should be flat, have a high solar index, and be close to critical infrastructure – e.g. transmission networks, roads and water sources and the potential sites are marked with yellow below:
- Purple represents land within 50 km of the Orange River



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# Barriers to solar efforts – regulations, policies, incentives, financing...

- Public acceptance of some technologies (e.g. relating to land access, NIMBY)
- High cost of generation and impact on tariff
- Cost recovery concerns of regulated utility
- Environmental approvals and other permits – social impact assessment
- Sustainability of incentive – rational and easy to access



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# Barriers to solar efforts – regulations, policies, incentives, financing

- Inadequate data and information on resource base
- Transmission/distribution access and constraints
- Network operability
- Local lenders willingness to take new risks
- Technical capacity and experience



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# What is being done to promote solar technologies?



- ✓ Evaluation and indication of preference of technology in IRP
- ✓ Demonstration plant for Solar Park Concept plus Eskom CSP
- ✓ Public consultation and education on SWH and SHS
- ✓ Introduction of RE IPP Bidding Programme
- ✓ Regulatory revamp, including Institutional (Independent System and Market Operator)

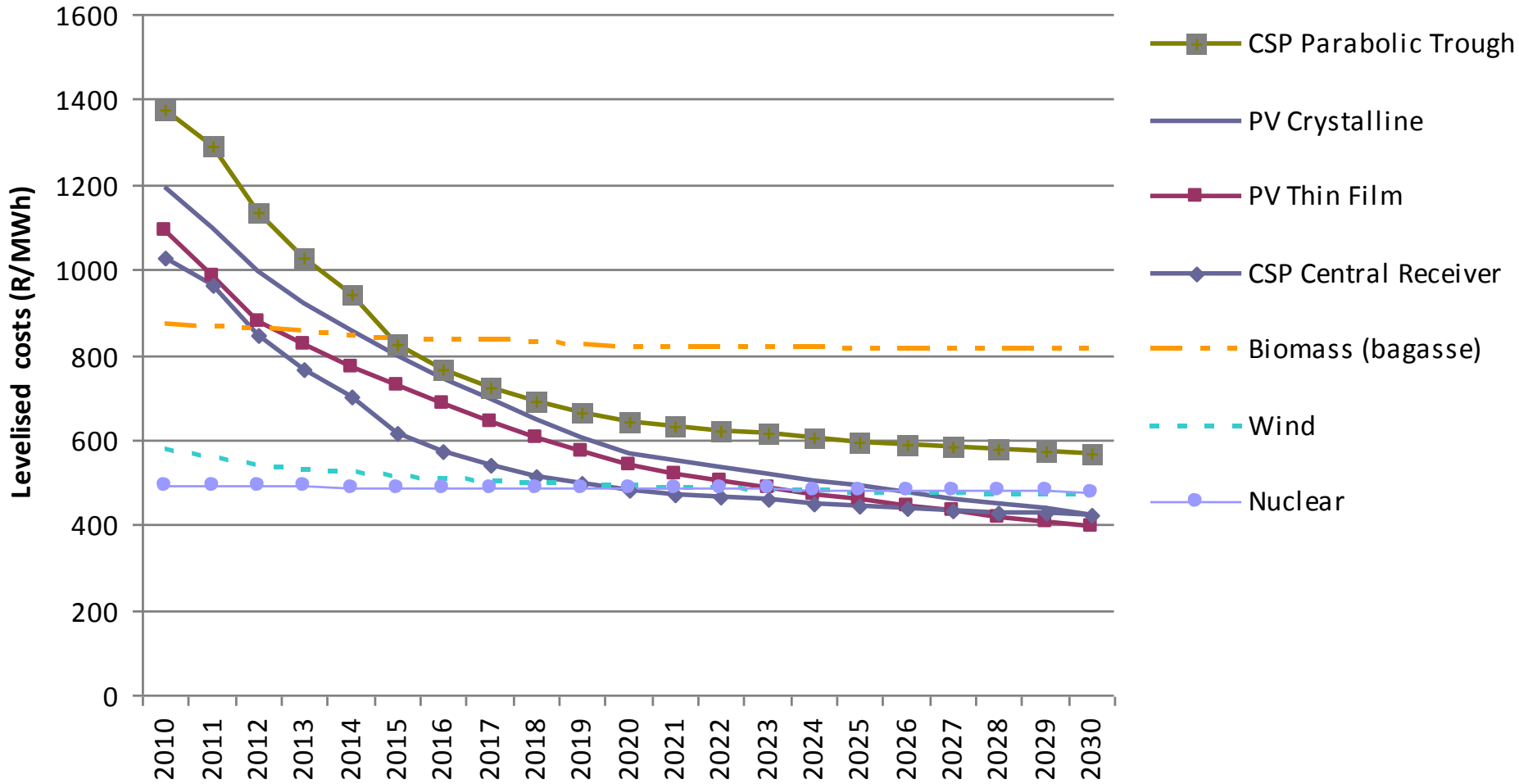


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# Learning rates will reduce future costs of solar technologies



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# Conclusion

- Clear business case for solar energy in South Africa
- Need to cut into the value chain and localize technologies
- Financing is critical given the upward pressure on tariffs



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