

# Eskom Upington CSP

## Case Study

*Preliminary insights*



Second CSP Dialogue  
January 2014  
Abu Dhabi

Rodney Boyd



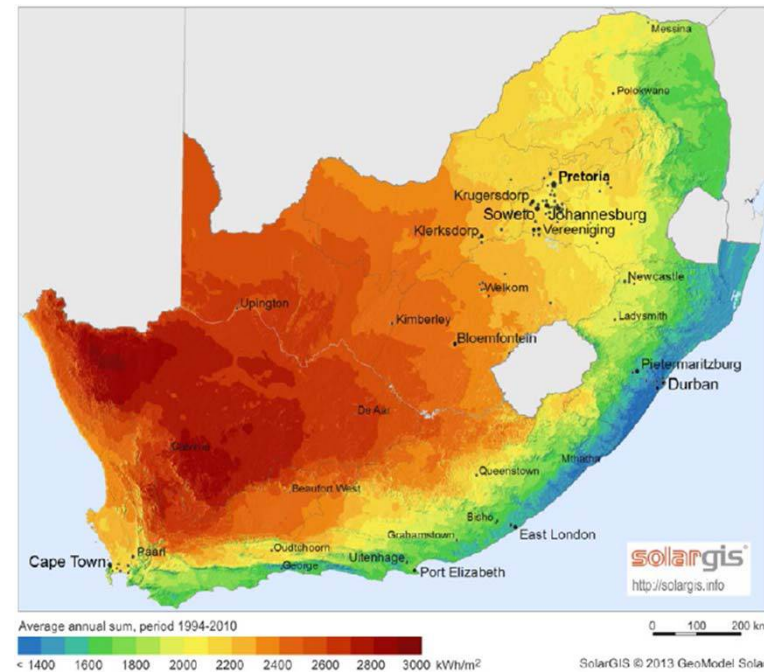
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# Outline

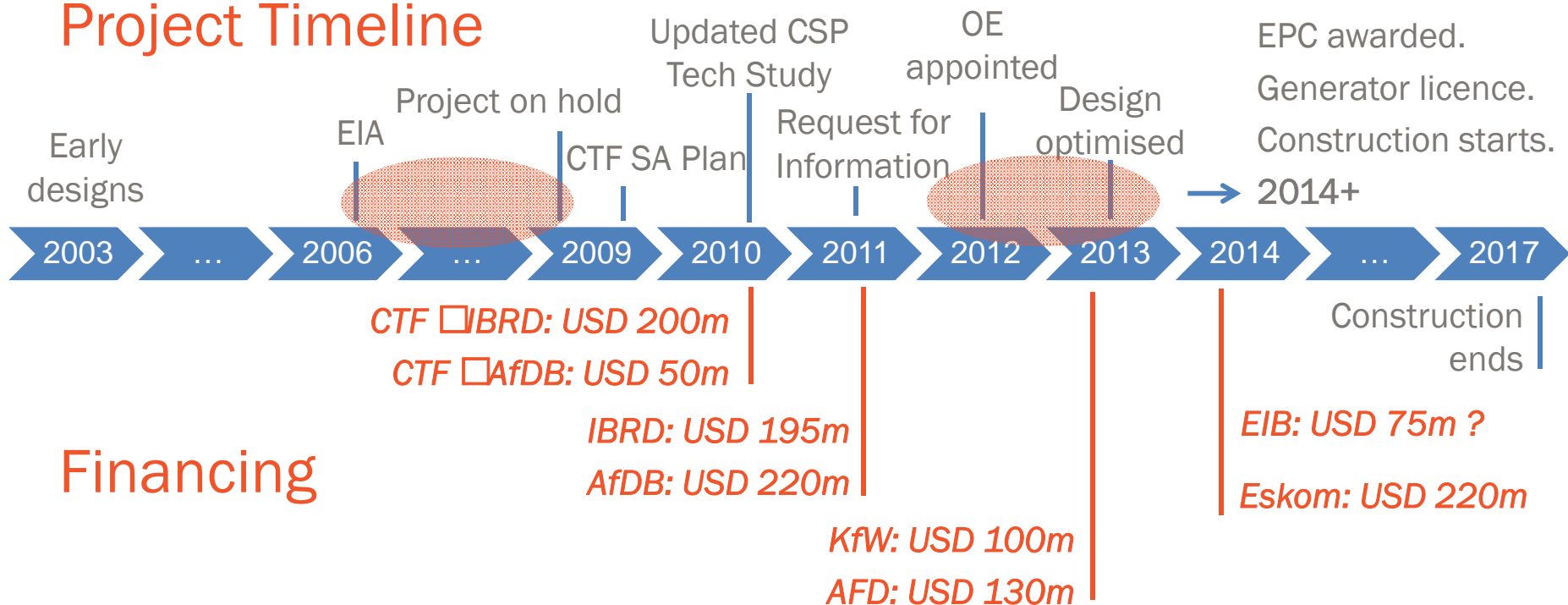
- The Project
- Key Challenges
- The Role of Public Finance
- Key Risk Arrangements
- Early Findings on Effectiveness



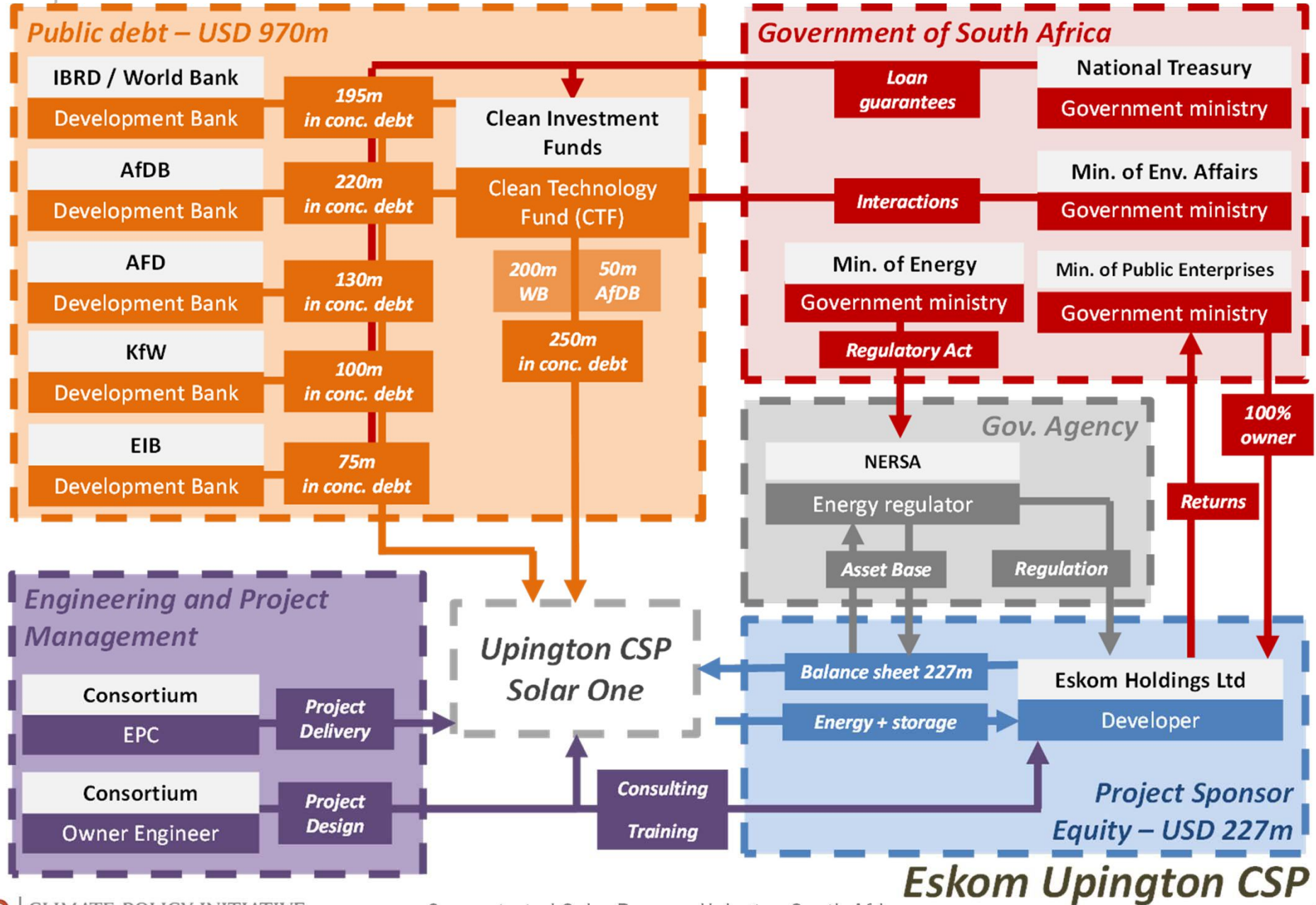
# The Upington CSP Project

Tower/central receiver, 100 MW, 9-12 hours storage, 60+% capacity factor. USD 1200 million plant developed by Eskom, South Africa's state-owned utility.

## Project Timeline

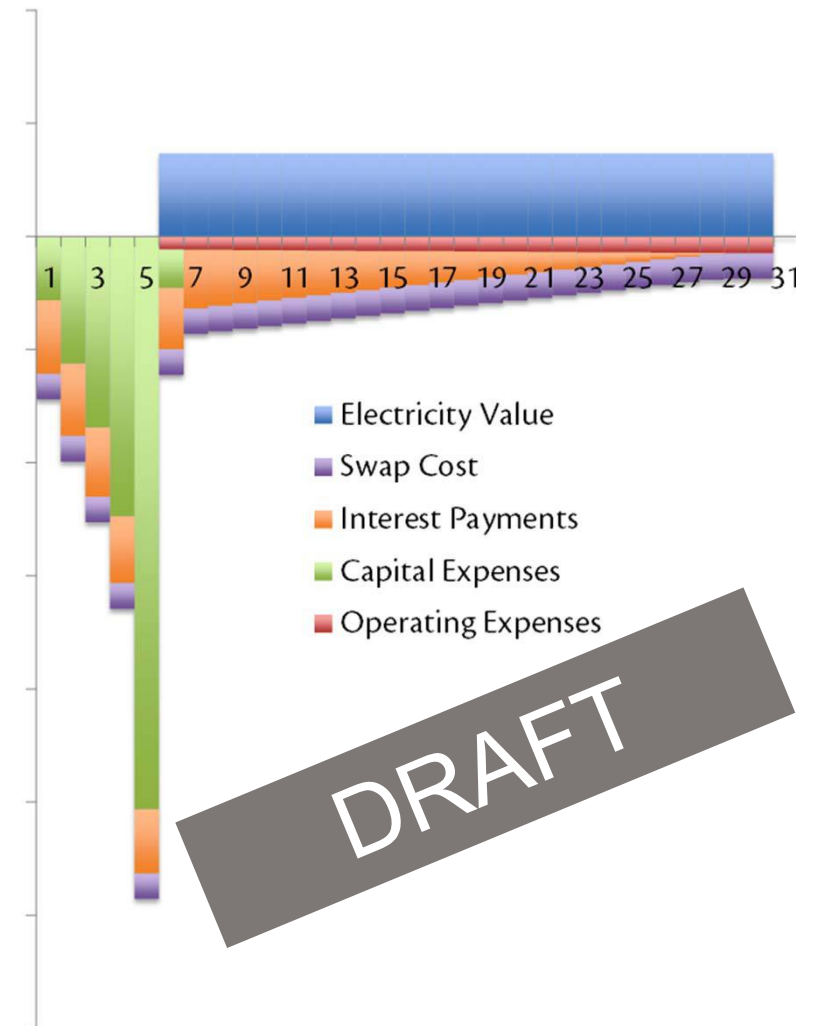


# Stakeholder overview who involved?



# Upington CSP: The Role of Public Finance

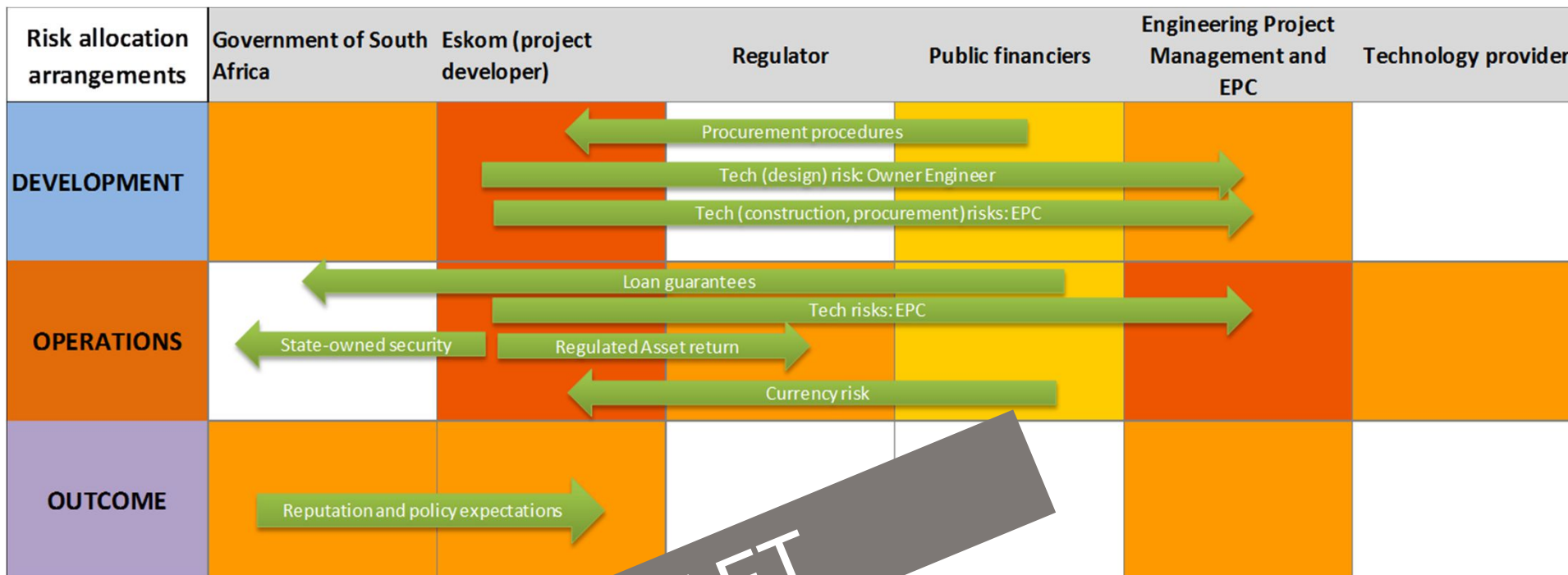
- Eskom developing Upington CSP as demonstration plant. Not typical.
- Public lending: encourage the climate-diversification of Eskom's energy portfolio, reduce its reliance on coal, support future CSP projects in SA, global benefit of project.
- Reduced impact of the project on the asset base (existing mainly of cheap coal).
- Currency cost high: lending in USD/EUR, returns in ZAR.



# Upington CSP: Key Financing Challenges

Challenges	Impact	Response
<ul style="list-style-type: none"><li>▪ Limited funds available to diversify.</li></ul> <p>→ <i>Competing energy objectives</i></p>	<ul style="list-style-type: none"><li>▪ Other options cheaper in short-term for energy security.</li></ul>	<ul style="list-style-type: none"><li>▪ Demonstrate technology, learn and bring cost down.</li></ul>
<ul style="list-style-type: none"><li>▪ Innovative project.</li></ul> <p>→ <i>Technology risk</i></p>	<ul style="list-style-type: none"><li>▪ Uncertain cost/timeline, lack of experience, lack of tech. providers.</li></ul>	<ul style="list-style-type: none"><li>▪ Engineering Project Management (Owner Engineer, EPC), including training.</li></ul>
<ul style="list-style-type: none"><li>▪ Balance sheet finance.</li></ul> <p>→ <i>Limited E/D options</i></p>	<ul style="list-style-type: none"><li>▪ Longer process raising additional financing, delays.</li></ul>	<ul style="list-style-type: none"><li>▪ Club lending from several DFIs necessary.</li></ul>
<ul style="list-style-type: none"><li>▪ Club lending.</li></ul> <p>→ Admin risk</p>	<ul style="list-style-type: none"><li>▪ Lending requirements, loan guarantees, currency risk.</li></ul>	<ul style="list-style-type: none"><li>▪ Meeting requirements. Internalising currency risk.</li></ul>

# Upington CSP: Key Risk Arrangements (Draft/TBC)



DRAFT

Risk allocation arrangement



Relative amount of risk taken on by stakeholders



## Upington CSP: Early Findings on Effectiveness

- What is the CTF [catalytic effect] First lender into innovative/ [non-bankable] project to provide, signal to Eskom, future lenders, and ministries.
- Parallel public financing (inc. CTF) in IPP private CSP process: to help bring CSP closer to market/costs down through capacity build.
- SA Benefits: in-house capacity building, helping future CSP projects, changing the perception of traditional utility away from coal-based investment, taking advantage of unexploited resources.

### *At the same time* □

- Eskom needed to adjust internal admin/tech procurement processes in line with lenders, and manage the interaction with policy.
  - Poses challenges for immature technology, need procurement and standards to be adapted to fit → how many tech providers are there?
  - Needs better interaction with national policy to avoid requirement conflicts (e.g. Competition Act).



Thank you for listening.  
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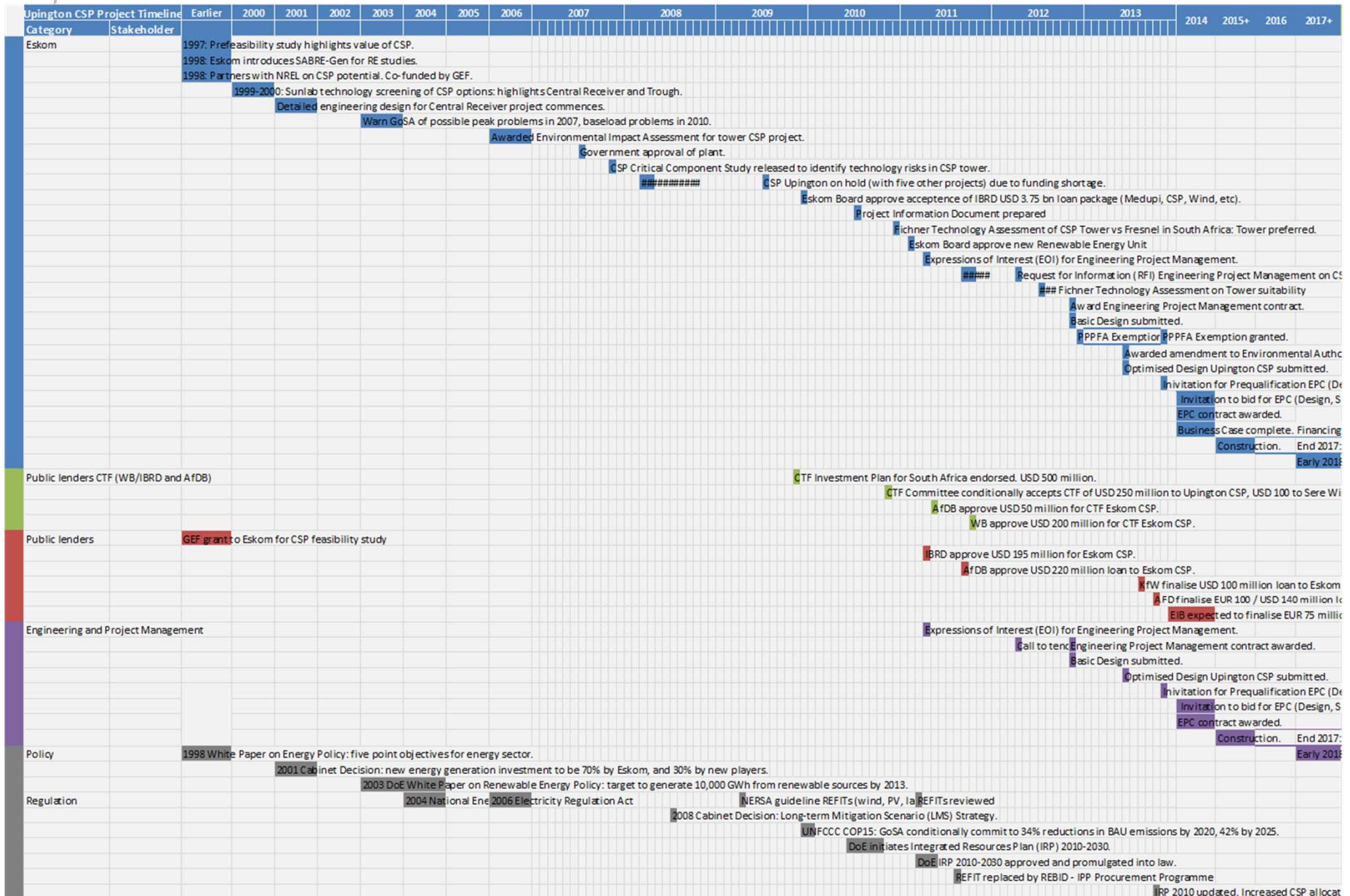


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# Backup: Full timeline



## Back-up: Comparisons of Eskom and IPPs

Eskom is **different** from IPPs:

- State-owned vs private
- Policy responsible vs independent
- Regulated vs non-regulated
- (*typical*) risk averse vs risk takers
- Large asset value vs small niche players
- No experience with non-hydro RE vs RE developers
- Asset-based revenues (*policy approach*) vs guaranteed PPA (*business approach*).

Upington is **different** from IPPs:

- Tower + molten salt storage vs others
- Concessional debt/regulated equity vs large equity
- High capacity factor vs lower output
- Largest storage + tower vs smaller/less storage
- Demonstration plant vs commercial

## Backup: Investors

Source	Financing type	Amount (USDm)	Share (%)	Currency	Approved
<b>Debt</b>					
<b>CTF - IBRD</b>	<i>Loan</i>	200	17%	USD	2010
<b>CTF - AfDB</b>	<i>Loan</i>	50	4%	USD	2010
<b>WB/IBRD</b>	<i>Loan</i>	195	16%	USD	2011
<b>AfDB</b>	<i>Loan</i>	220	18%	USD	2011
<b>KfW</b>	<i>Loan</i>	100	8%	EUR	2012-2013
<b>AFD</b>	<i>Loan</i>	130	11%	EUR	2012-2013
<b>EIB</b>	<i>Loan</i>	75	6%	EUR	2014 (exp)
<b>Equity</b>					
<b>Eskom</b>	<i>Balance sheet</i>	227	19%	ZAR	2013-2014
<b>TOTAL PROJECT COST</b>		<b>1,197</b>			

Source: CIF, 2013