



Financing renewable energy

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Outline:

1. The need for energy
2. South African context
3. The financing challenge
4. Cape Town's experience
5. Some tentative insights

The need for urban energy

1. Strong correlations between energy and well-being
2. Suppressed demand – no grid connection, not enough energy, unaffordable energy, unsafe energy
3. Energy and economy now co-dependent and simultaneously planned
4. Government investment in energy (and mobility) used to be a recession buster but not clear what to invest in now
5. Not possible to address urban poverty without addressing urban energy
6. Africa's urban spaces are changing rapidly

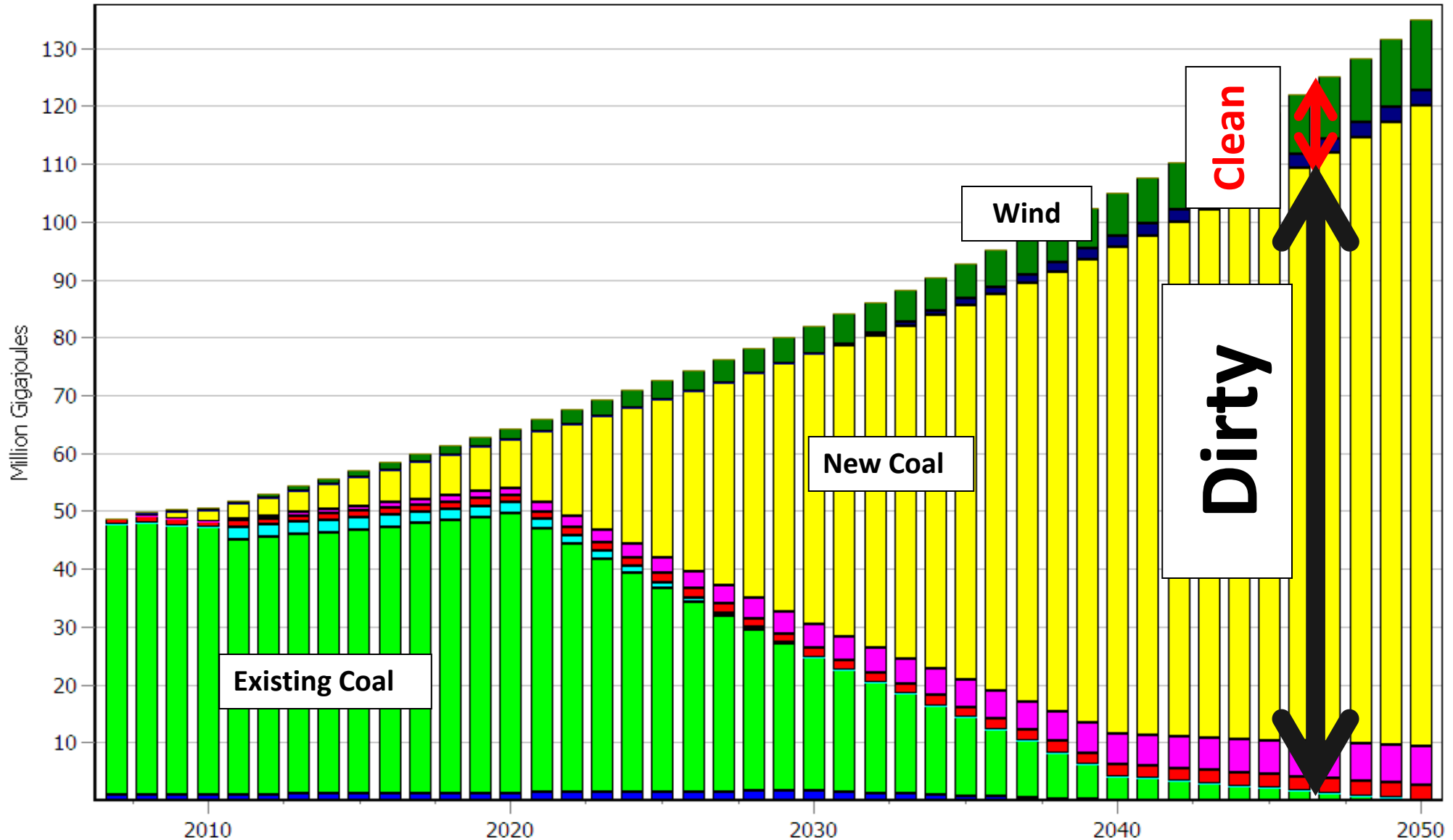
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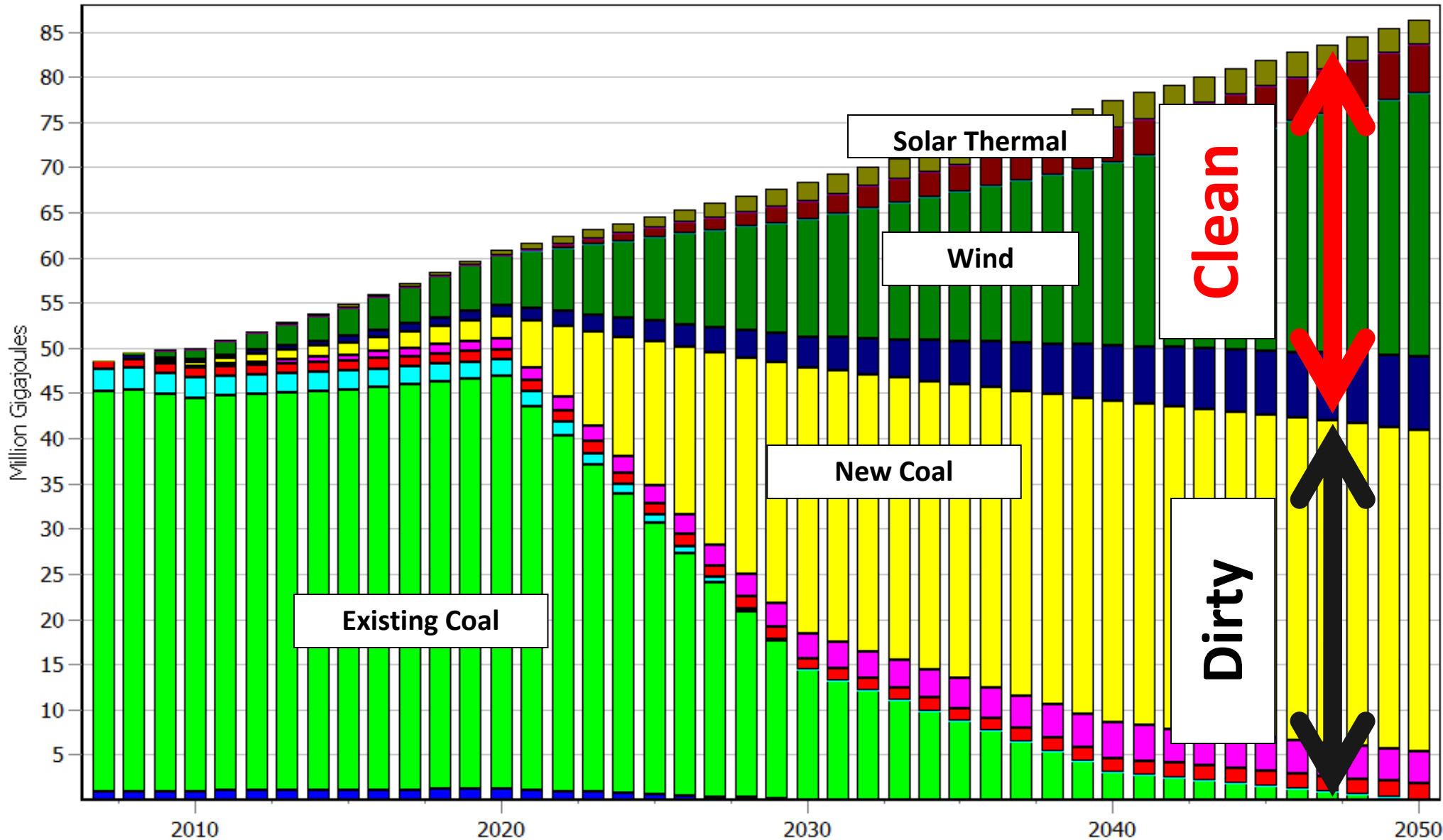
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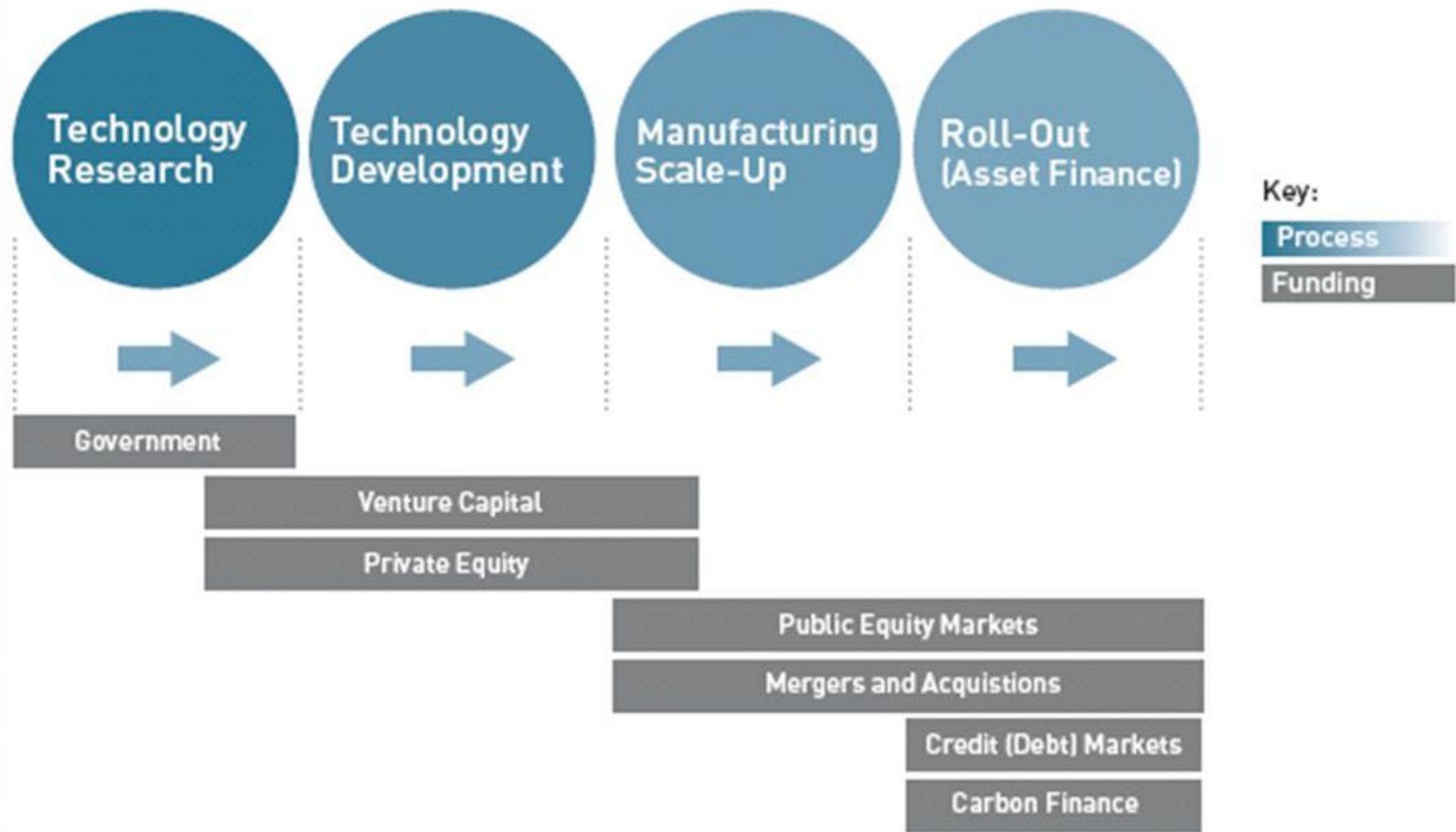
Electricity supply mix

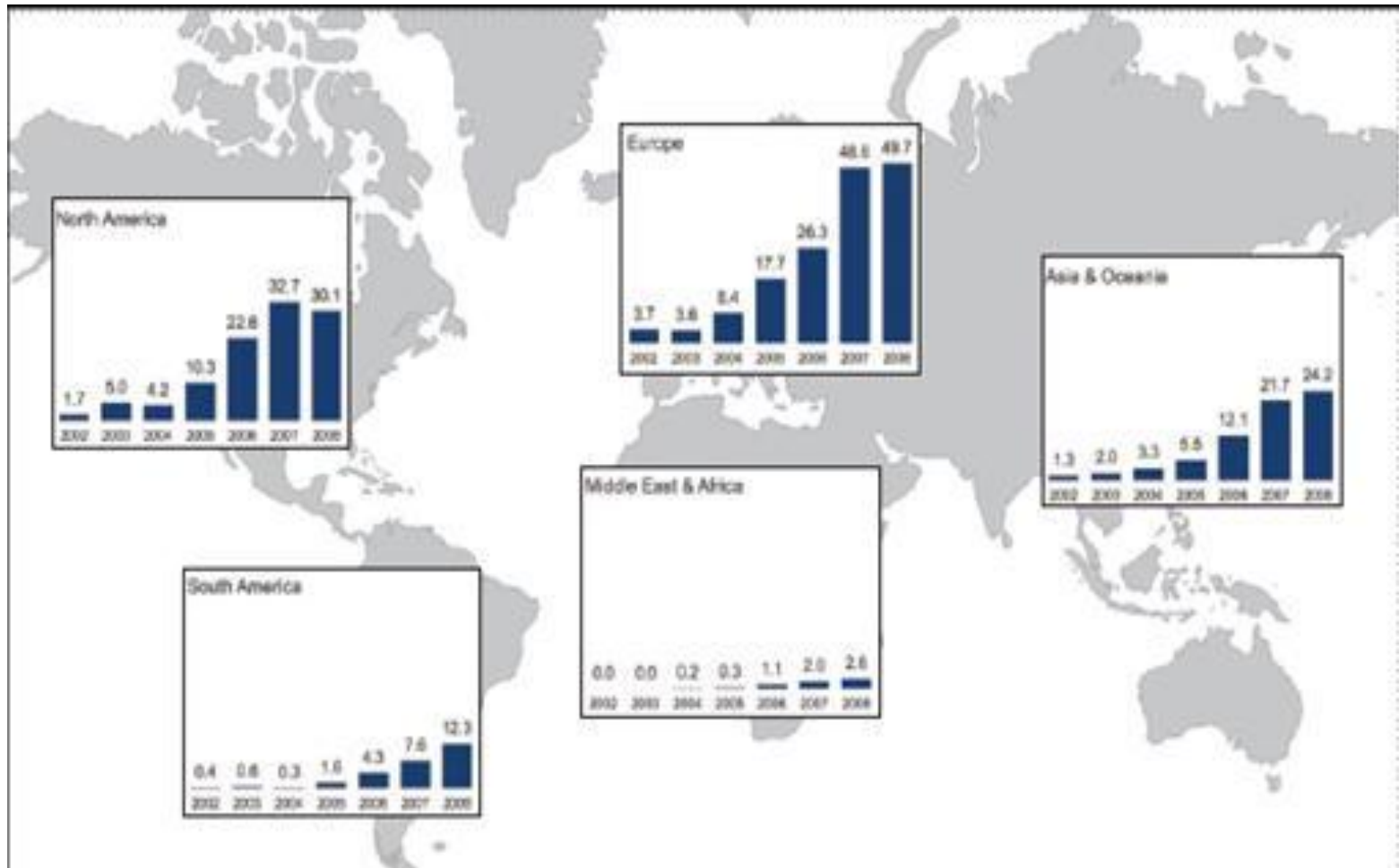


Optimum Energy Future Mix



THE SUSTAINABLE ENERGY FINANCING CONTINUUM





Financing options

- **Fiscal support (subsidy of feed-in tariff)** – difficult in fiscally constrained times. Not always seen as a priority against backdrop of housing etc need.
- **Carbon tax** – how to measure emissions and tax exposure is tricky (might be easier to tax resource use). When is a “ton of CO2 a ton of CO2” Concern re impact on growth. What you spend the money on and how?
- **Leave it to the market** – is some demand, but competing with subsidized coal. Cost of wind is flattening out, cost of solar still declining rapidly.
- **Donor grants (global climate fund)** – not a great track record. May crowd out local investment and technologies. Tends to be inefficient and have unforeseen consequences.
- **Carbon market** – has failed in Africa. Less than 2% of investment to date. Less than 0.01% of what is required to reduce GHGs.

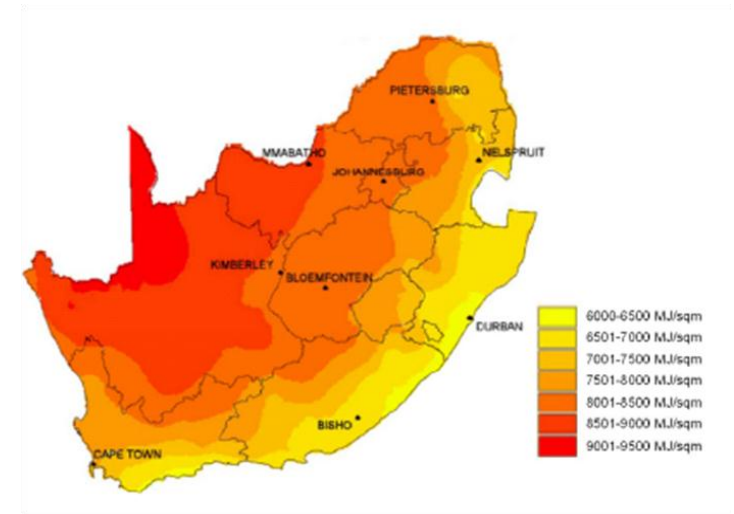


The RE challenge in Cape Town

	Carbon Productivity	Per capita Production Carbon Footprint
	[USD GDP / tonne CO ₂ e]	[tonne CO ₂ e / capita]
City of Cape Town	670	7.8
Western Cape	770	6.1
South Africa	400	8.9
Required by 2050 for stabilisation at 450ppm	7,300	1.2?

Renewable energy in CT

- Political differentiation
- City-scale energy security – not about resource, about distribution
- Protect competitive advantage and export markets, generate new competitiveness
- Create employment
- Attract investment
- Show leadership



Why the struggle Cape Town?

- Financial barriers
 - Trying to replace cheap energy
 - Appetite for risk is low at the moment
- Institutional barriers (national context)
 - Mixed messages on renewable energy
 - No legal mandate to supply the grid
- Local issues
 - Leaves a hole in City budget
- Vested interest and lobby groups

The carbon market was intended to.....

- Reduce the cost of meeting targets
- Direct investment to the point of lowest “marginal abatement cost” opportunities
- Transfer RE and EE technologies to developing countries
- Has proven a very blunt instrument

Africa receives less than 2 per cent of CDM investment.....

- Some institutional barriers
- Mainly high transaction costs and resulting market failure
- Costs are the result of difficulty of imperfect information - not knowing when 1tCO₂e is 1tCO₂e, inherently unknowable in some instances
- Some success with local registries – Credible Carbon

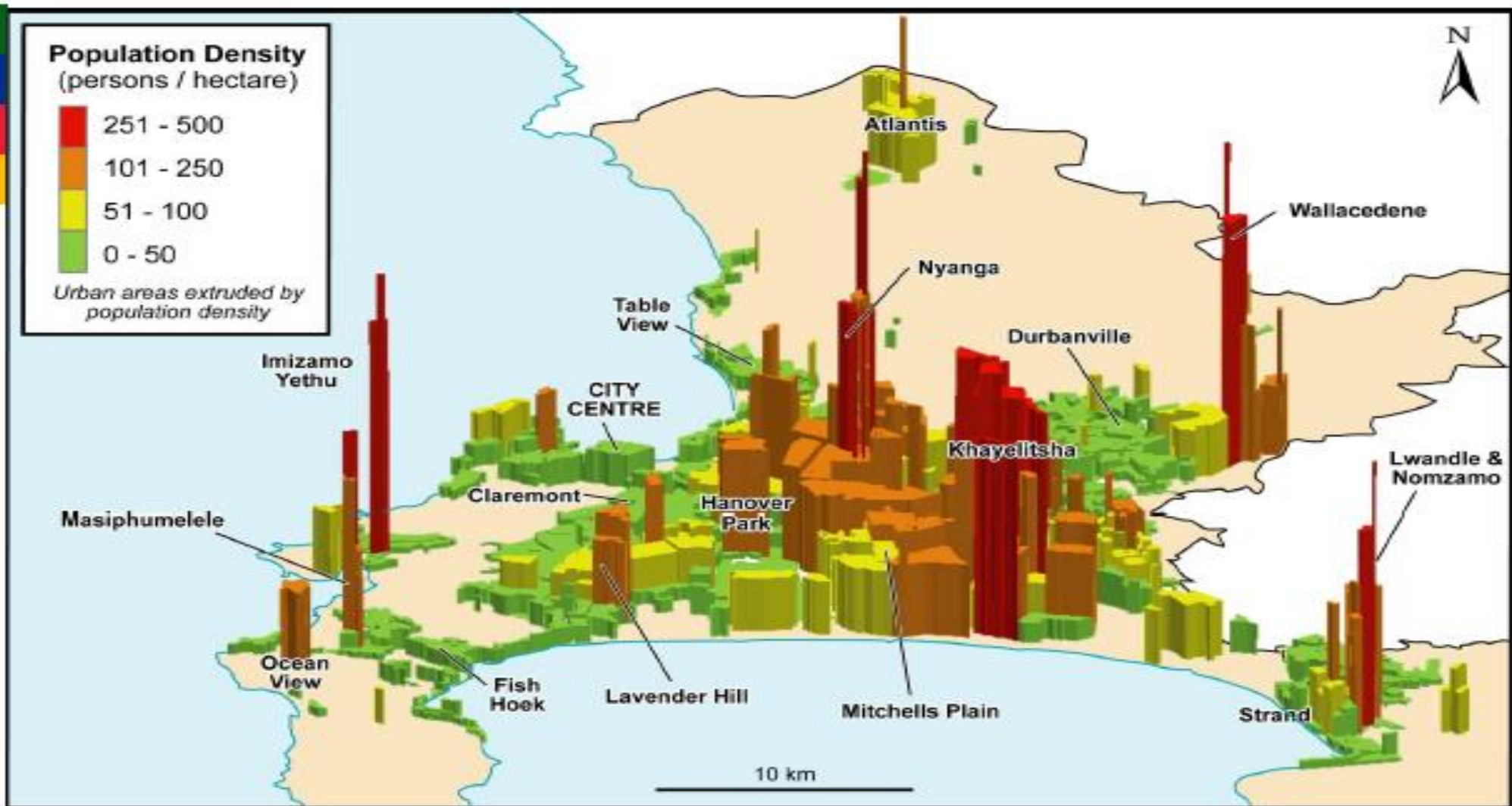




Role of pension funds

1. What type of future are people saving for
2. Large amounts of institutional investment
3. Problem so far has been poor returns relative to minerals-energy complex
4. Governance of private funds is contentious – risk downgrades

Spatial form matters



Conclusion

- In spite of vested interests in the “minerals energy complex” some cities are looking to transition to RE for a variety of motivations
- Smart-grids and diffuse solutions look best, but need for central coordination still there to address the intermittency issue (match supply and demand peaks).
- How you finance this transition is not clear – very few clear precedents of success to date
- Financing models are likely to involve a combination of public, private finance, institutional reform (smart grids), regulatory change and innovation. The assumption that the market or the government will get this right on its own, or that is just a financing issue does not seem to be true....leads to wrong outcomes.
- Have to invest without good data - requires leadership
- Energy efficiency is important cost effective, much potential for households that have energy in the first place.



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