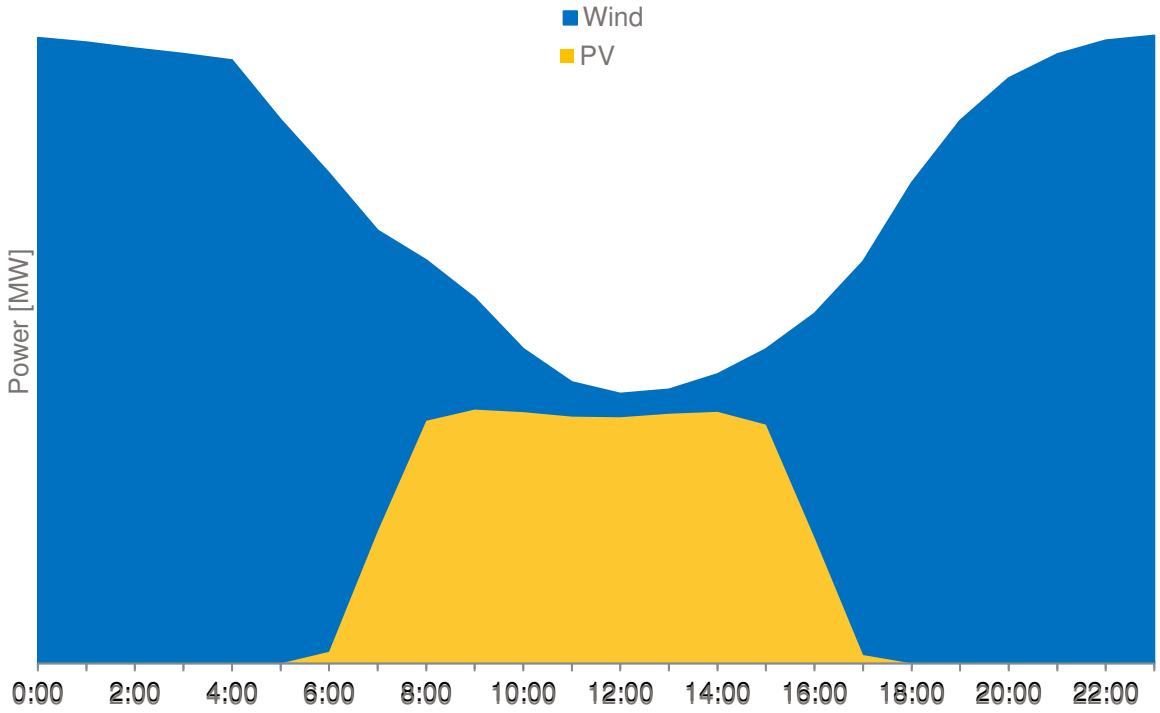
How relevant is wind for mining?

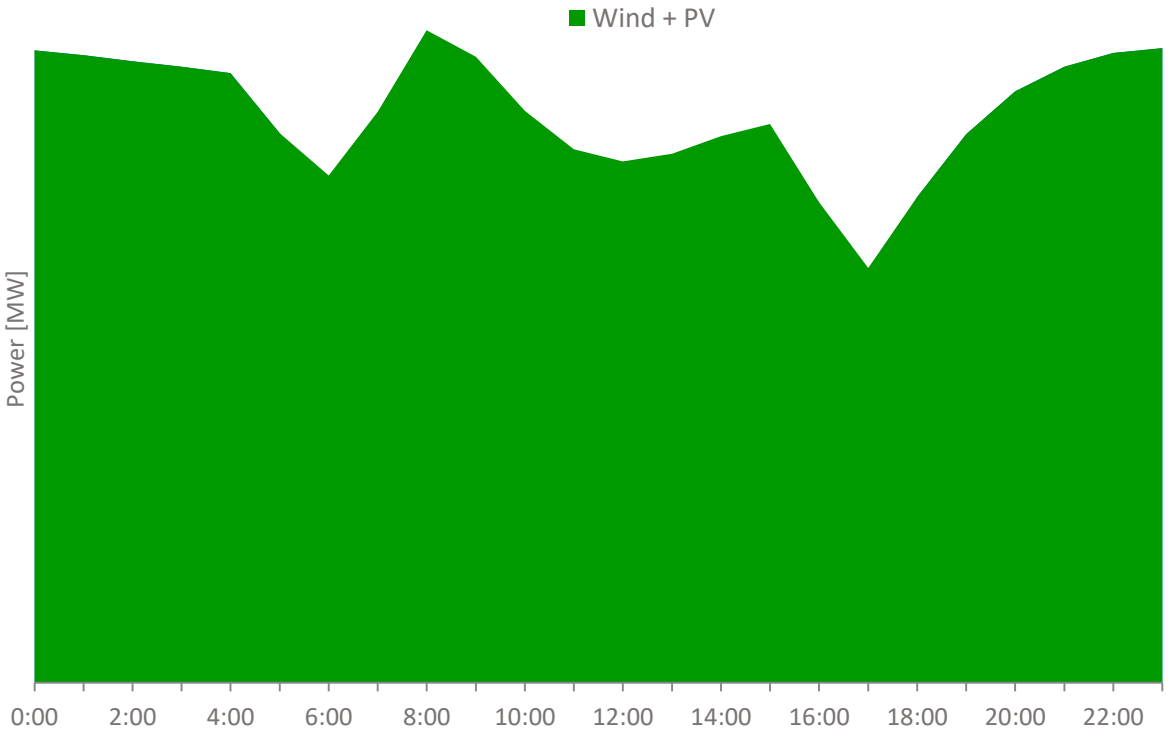
Amiram Roth-Deblon – August 4th 2020

Image credit: Gold Fields

Agenda

1. From daytime only to 24/7 renewable energy
2. Lessons learned from landmark hybrids
3. Benefits and risks of windpower
4. Where to use windpower


Wind
PV
Power [MW]
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00


Wind + PV
Power [MW]
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00

Lessons learned

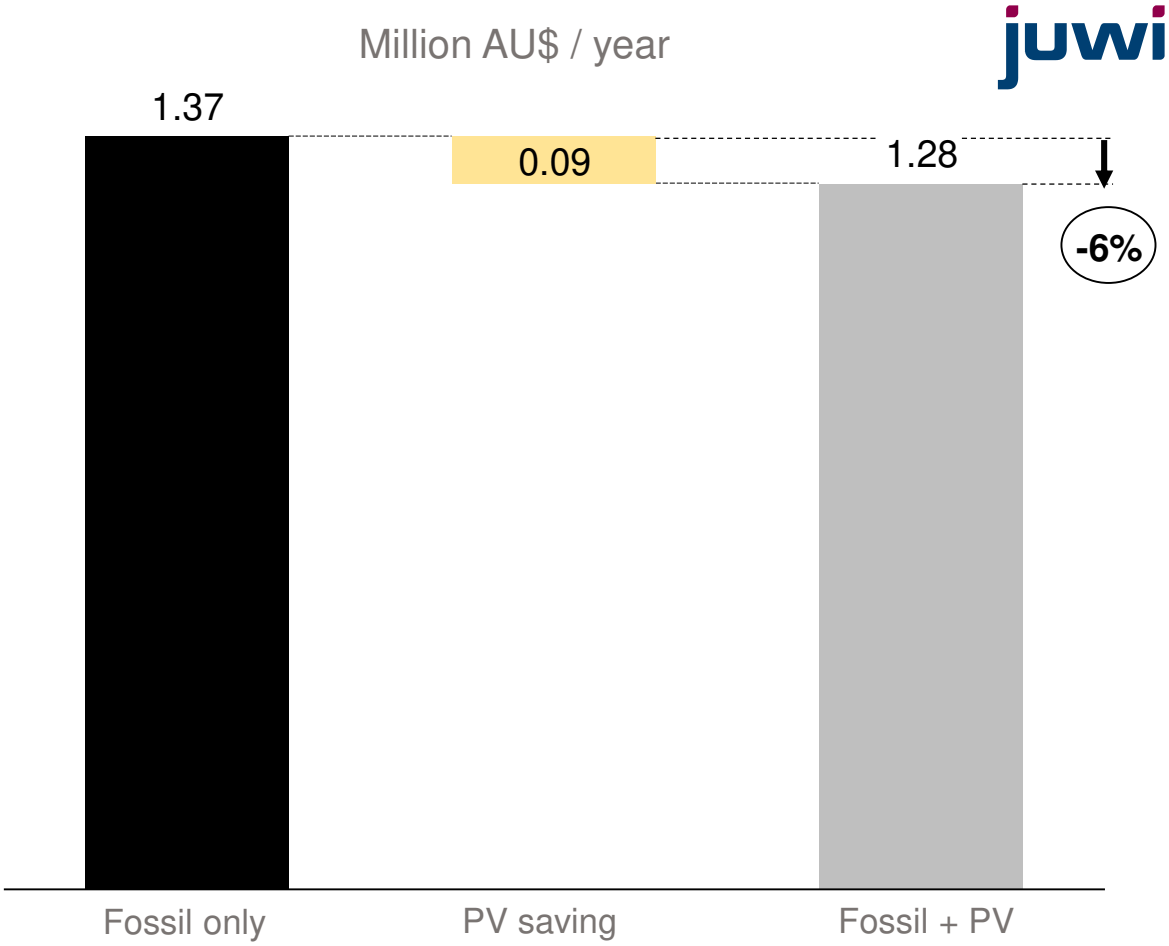
- Solar provides the lowest cost for daytime electricity
- Batteries increase security & enable more renewable energy
- Wind is competitive & provides power at night
- Solar and wind complement each other in Australia
- The most reliable & lowest cost combine wind, solar and battery

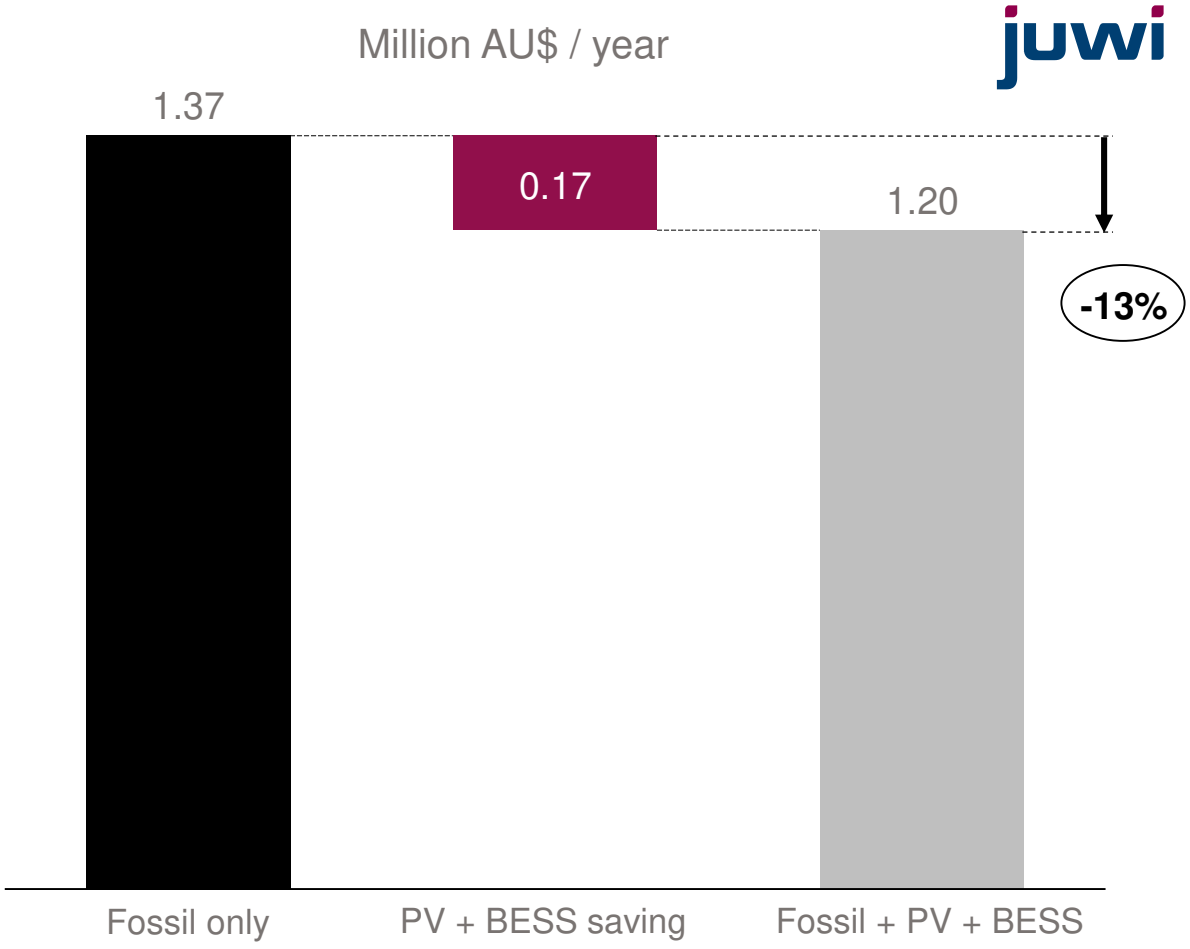
What are the risks of windpower?

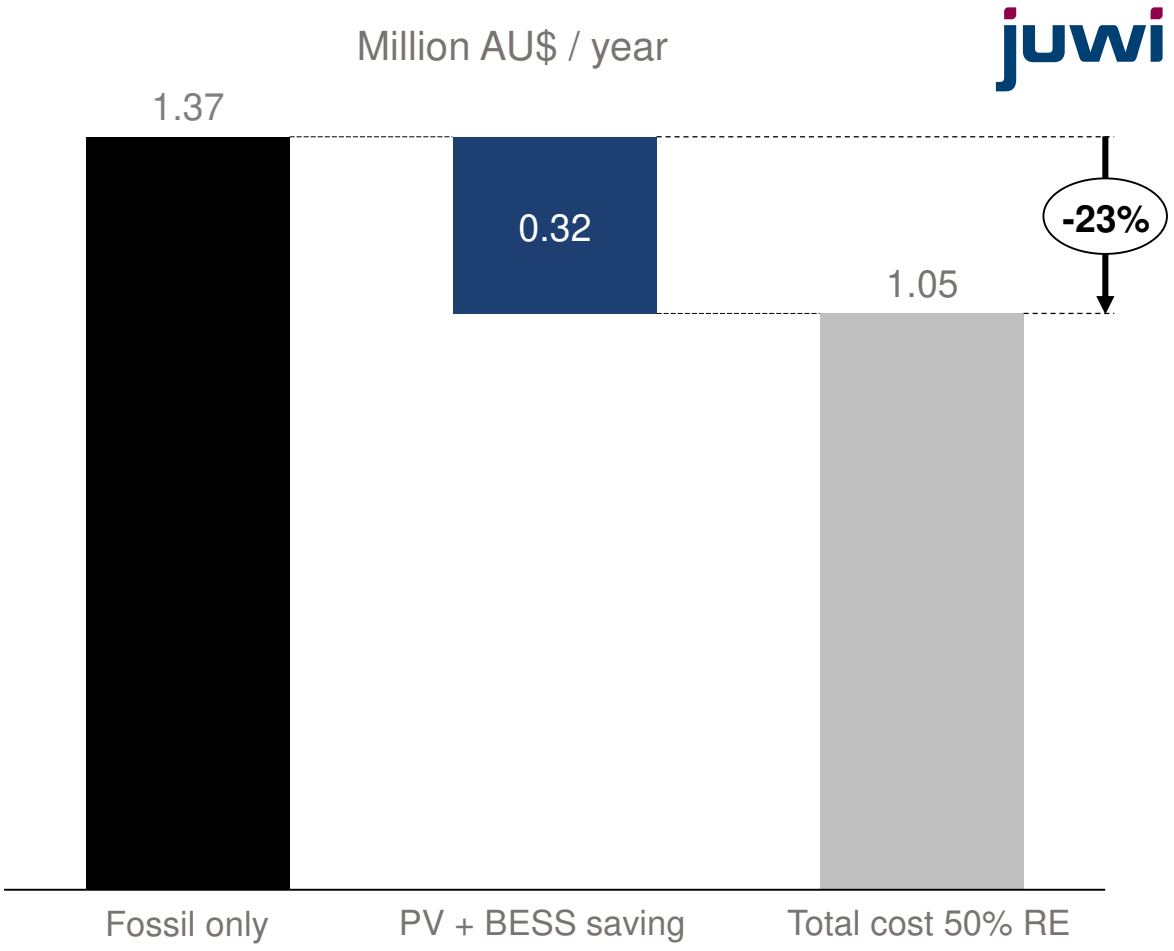
- Energy forecast, permitting and project delivery
- CAPEX instead of OPEX
- Complexity with multiple energy sources

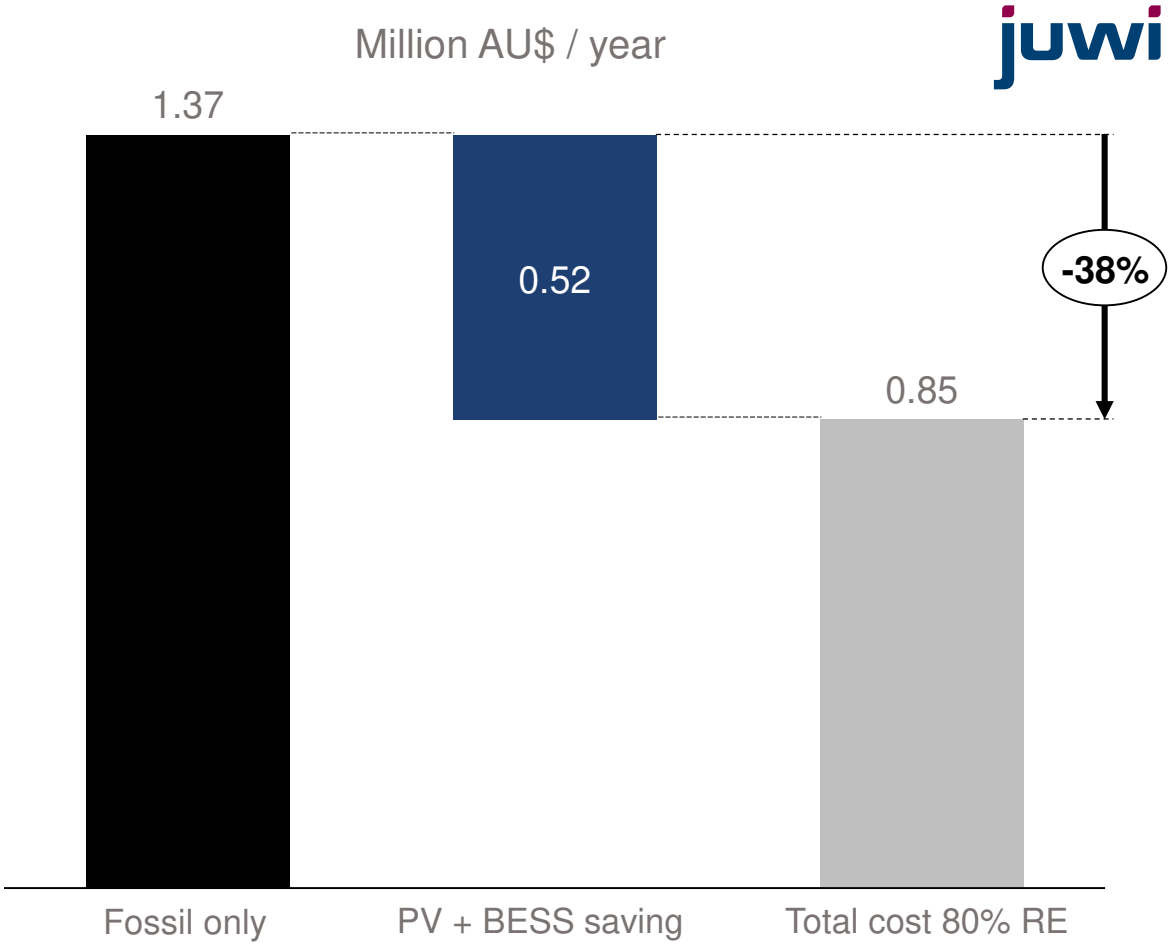
Benefits of adding wind

- Double reductions in cash operating costs
- Double carbon savings
- Reduced fuel price exposure

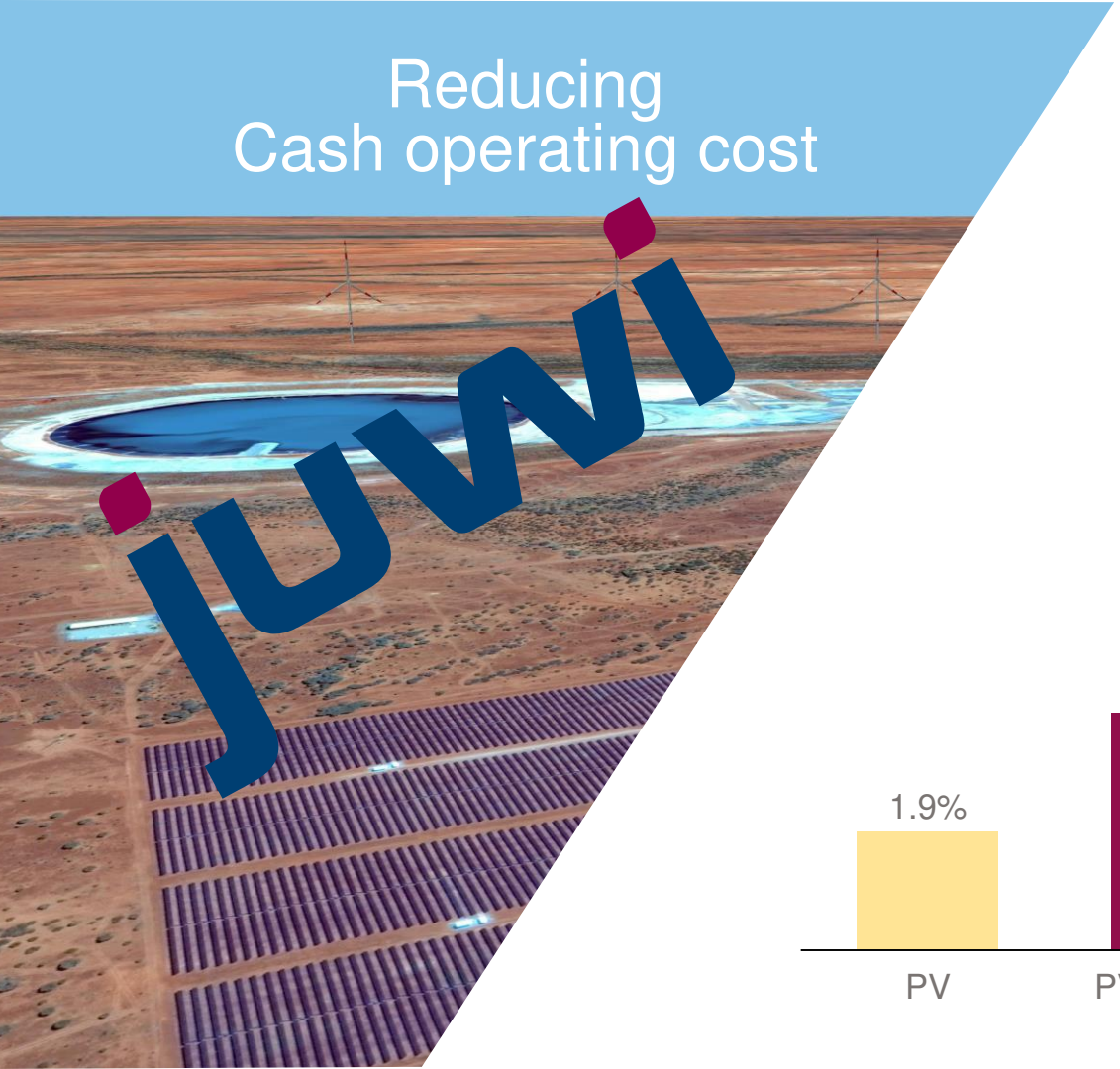

Million AU$ / year
1.37
0.09
1.28
-6%
Fossil only
PV saving
Fossil + PV

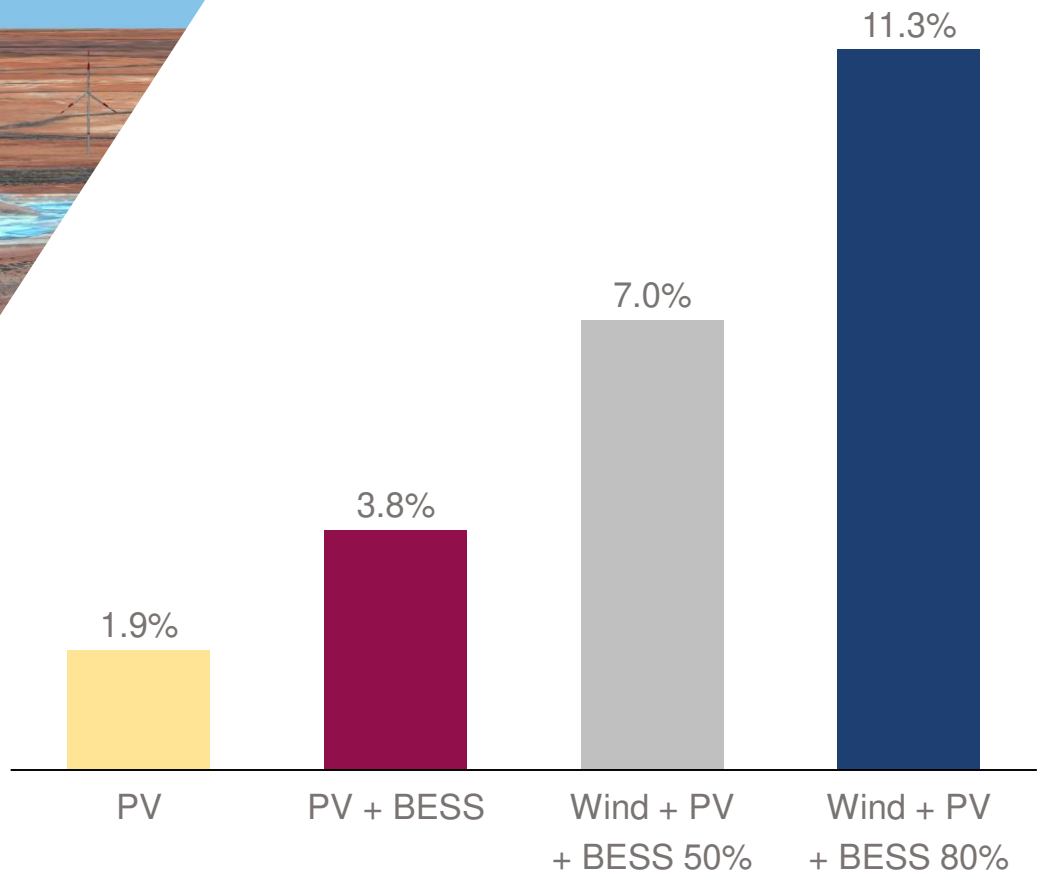

Million AU$ / year
1.37
0.17
1.20
-13%
Fossil only
PV + BESS saving
Fossil + PV + BESS


Million AU$ / year
1.37
0.32
1.05
-23%
Fossil only
PV + BESS saving
Total cost 50% RE


Million AU$ / year
1.37
0.52
0.85
-38%
Fossil only
PV + BESS saving
Total cost 80% RE

Reducing
Cash operating cost





Where to use windpower?

- Life of mine >8 years
- Power demand at night or seasonal climate
- Average windspeed of >= 7 m/s

juwi

How can we support you?

Thank You

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