Energy efficient, sustainable cooling for hot & humid climates

Picture credit: Sinarmas land
The challenge is addressing:
growth, warming & humidity

- 200 GW by 2040
- 300M+ Units by 2040
- Asia (tropic) = humidity >60% RH
Still challenges remain: peak demand reduction, initial system cost.
Solar air conditioning

Key benefits

1. Solar driven - lower grid electricity use
2. Free hot water and heating
3. Fresh air cycling (indoor quality improved COVID-19 support people’s return to work to offices)
4. Humidity benefits
CSIRO: overall project lead

SJ: Local project lead

Sinarmas: pilot site owner

ITB: M&V partner
Project commissioning phase

- Site preparation (Sinarmas)
- Build prototype (SJ)
- Install and commission (SJ)

M&V phase

- M&V (IBT)
- Capacity building activities
- Knowledge dissemination

Project maintenance phase

- Annual maintenance by SJ for 5 years

Project timelines

- ~4 to 8 months
  - Project commissioning report

- 9 to 16 months
  - M&V benefits established, final project report
  - Asset transferred to Sinarmas

- 18 months to 5 years
Our roadmap

**Done**
- Develop technology & invested in
- Demonstrated in humid environment
- Understand supply-chain
- Understand market-barrier & have develop plans to address

**Doing (with TIC Grant)**
- Pilot demonstration in development context (Indonesia)
- Securing early customers & partners
- Business model development, testing & refining
- Secure supply chain (emerging Asia)

**Next**
- Demonstrate across emerging and developed Asia
- Trial & validate business model across the region
- Secure global supply chain
- Global expansion
Thank you

Energy Business Unit
Dr Subbu Sethuvenkatraman

+61 2 4960 6135
Subbu.Sethuvenkatraman@csiro.au