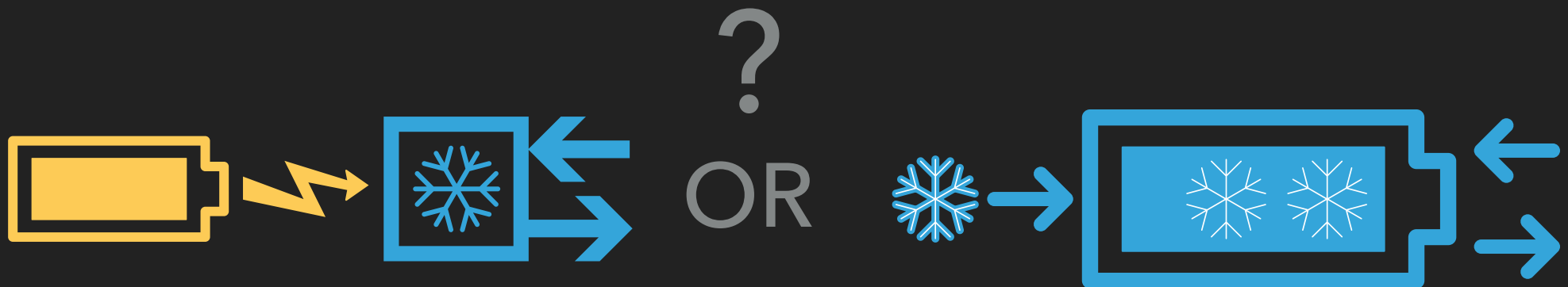


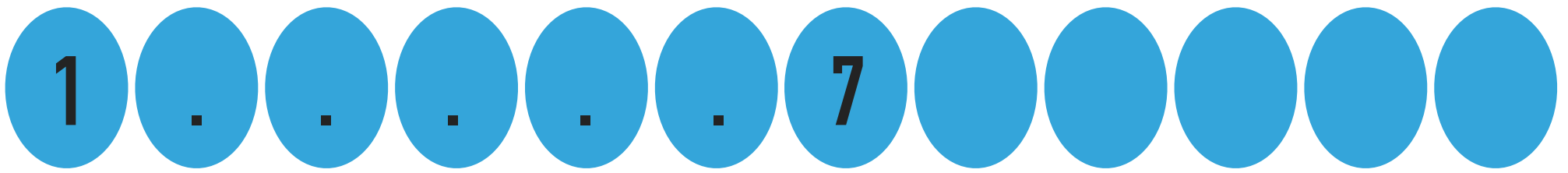
HOW TO GROW WITH THE FUTURE

**DEMAND SIDE
MANAGEMENT
AND CHILLERS**



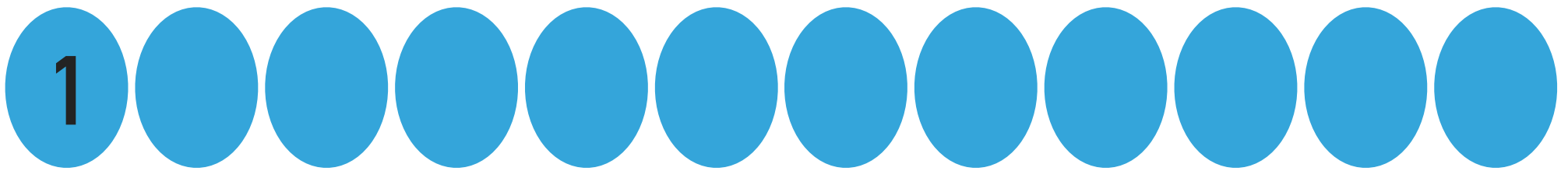
STORE WHAT YOU NEED AND WHAT COSTS LESS
WHY SHOULD WE STORE ELECTRICITY IF WE NEED COLD?





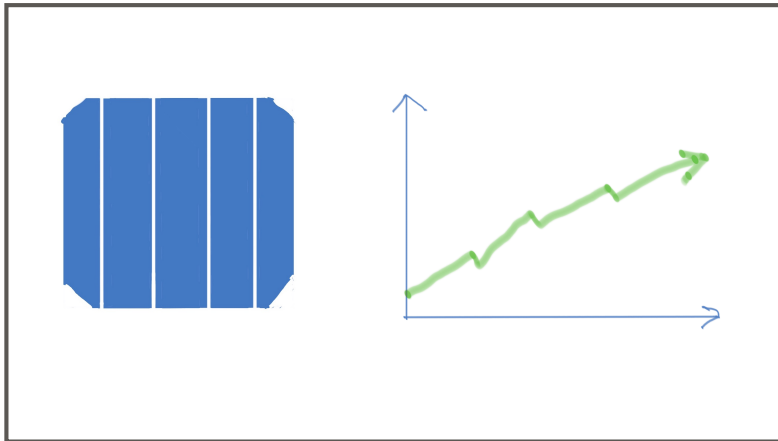
OVERVIEW

1. Situation in India
2. Situation asks for DSM
3. Where do we store the energy?
4. Simulation of an ice storage
5. What if...? Let's make it still better!
6. Next steps
7. Conclusion



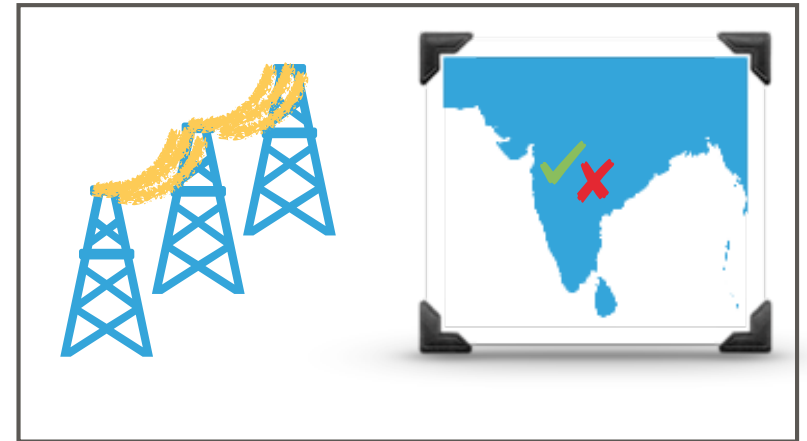
SITUATION INDIA

1.



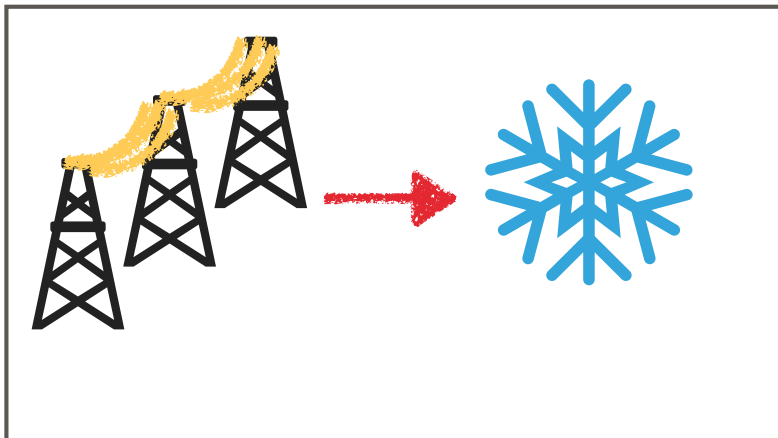
RES India, 175 GW in 2022?

2.



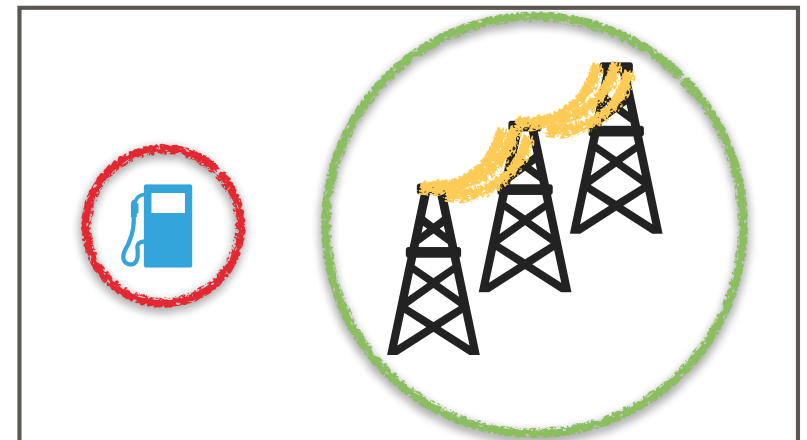
Grid: good moment to decide

3.



How much electricity for cooling?

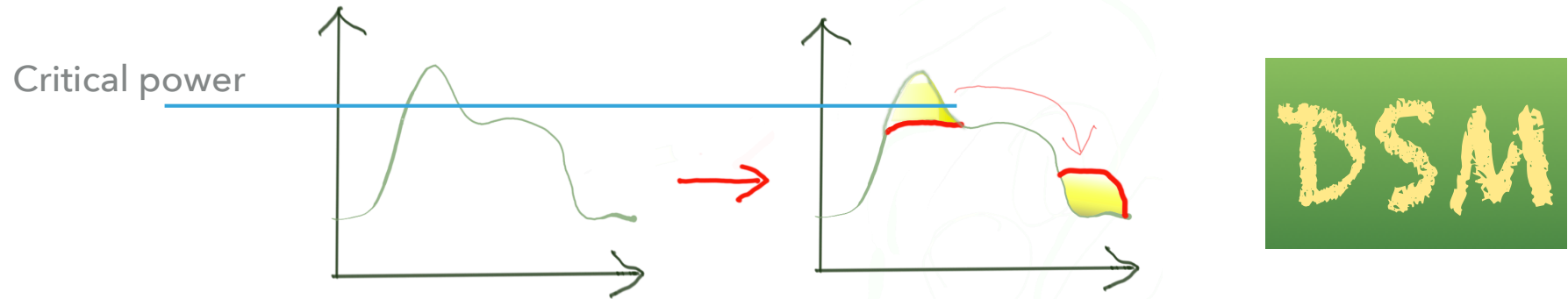
4.



More focused on electricity than fuel

2

SITUATION ASKS FOR DSM

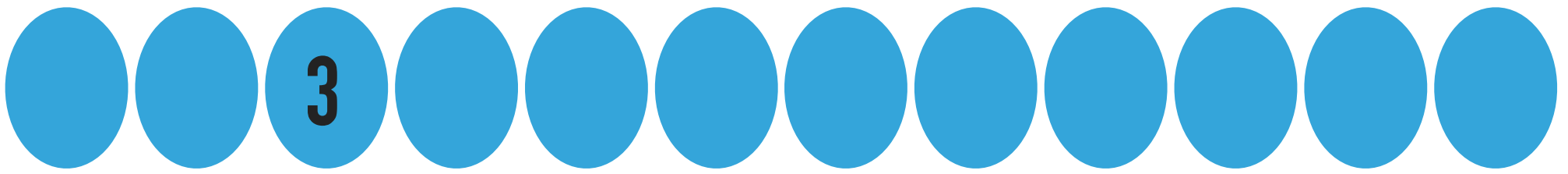


Must:

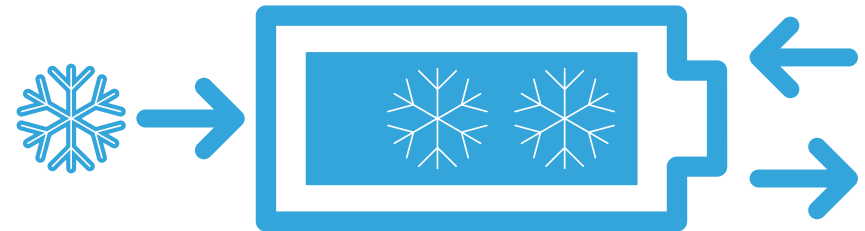
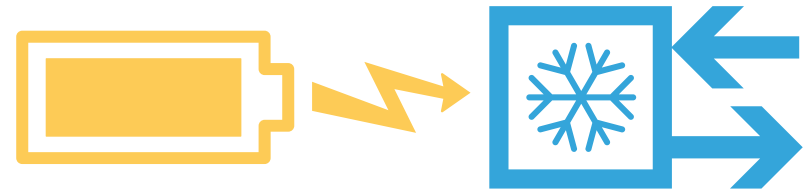
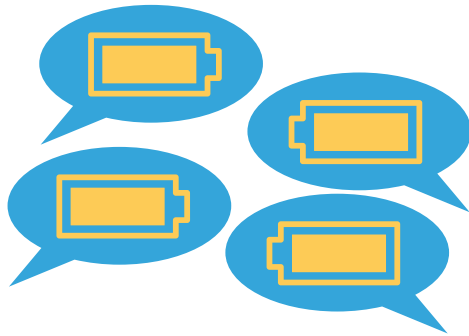


Opportunity:





WHERE DO WE STORE THE ENERGY?



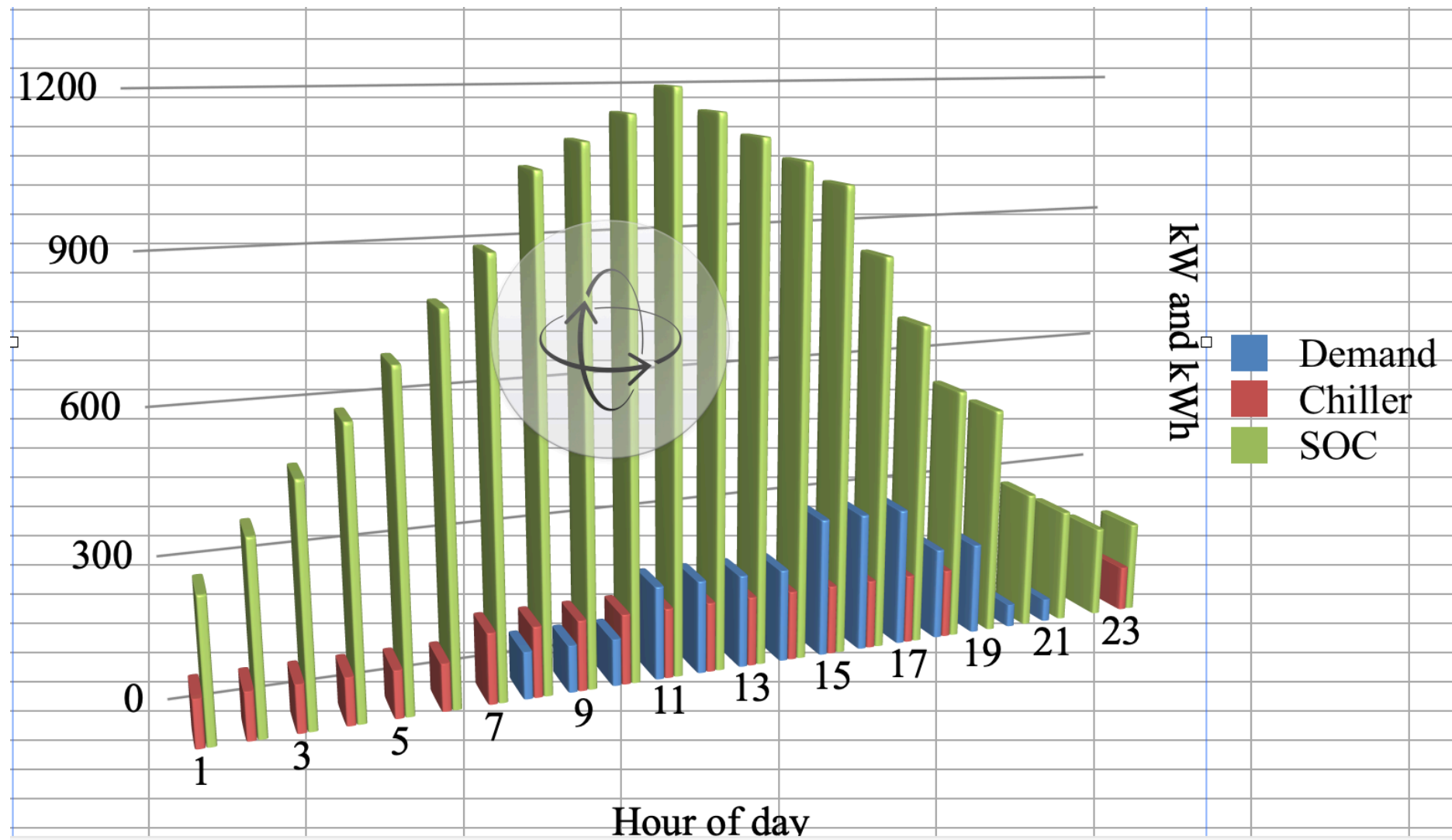
- Only cold
- Less known



- Better roundtrip efficiency
- Costs less
- Less dangerous
- Big power without big chiller

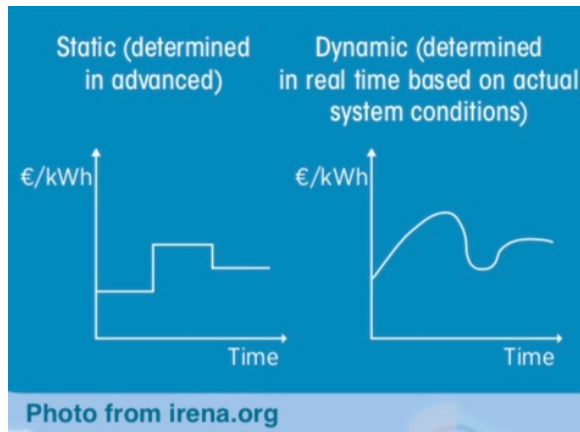


SIMULATION OF AN ICE STORAGE



WHAT IF...? LET'S MAKE IT STILL BETTER!

Dynamic pricing of energy



- Need smart meters
- Need understand and observe market



- Still more savings
- Incentive more precise, better for grid and India
- On long term, this should become standard



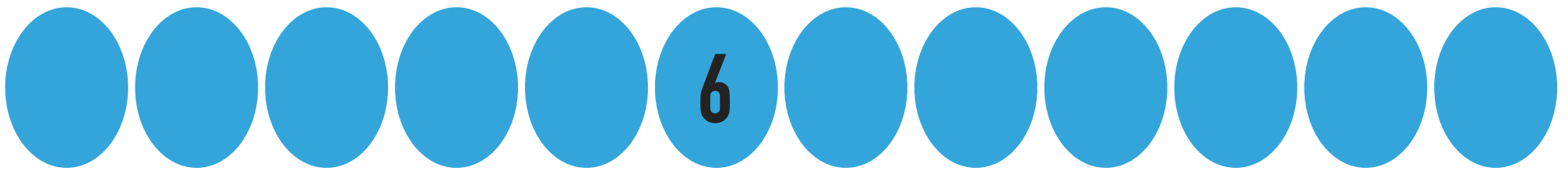
ICE engine on chiller



- Fuels are scarce in India
- Emissions, vibrations
- Maintenance



- Better efficiency
- Fuels less scarce in summer
- Anti black out
- Constant run with ice storage



NEXT STEPS



Experimental project



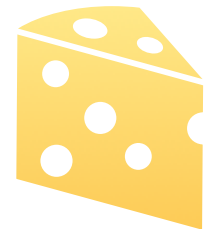
Hotel



Hospital



Food distribution

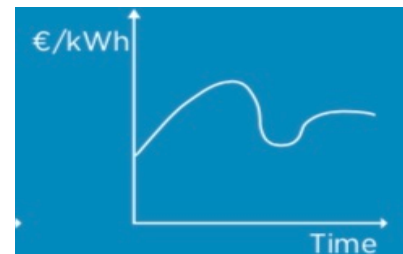


Where cooling is essential (other examples welcome)

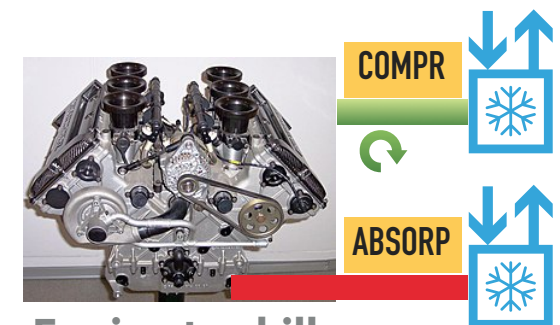
INCLUDE ONE OR MORE OF THE FOLLOWING:



Ice storage



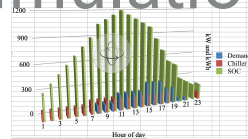
Dynamic pricing



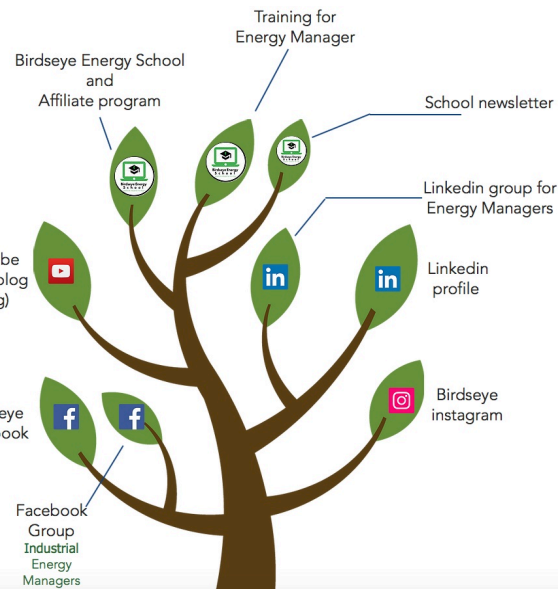
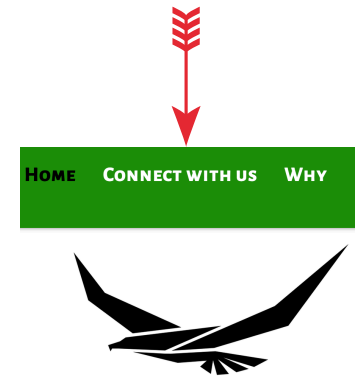
Engine to chiller

CONCLUSION

- ▶ Info on nnvasen@birdseye-ec.com and website (see below)
- ▶ The ice storage simulation is on my **Newsletter**



www.birdseye-ec.com



YouTube blogs



Newsletter



TEXT
