Delivering consumer insights at a state-owned electricity gentailer.

Data science process in WA's electricity sector

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Our teams

Analytic delivery model at the organisation

- Managerial reporting decentralised in all business units
- Platform and BI expertise in corporate shared services
- Advanced analytics centralized in operational business unit

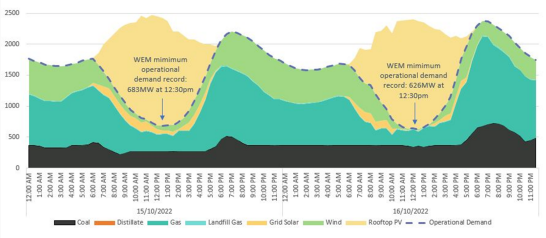
Customer Business Unit's data science stars

(names and photos omitted from this version)

Using data science for energy management

Solar creates incentives to shift consumption in time

About 40% of WA households have solar panels, at times reducing day-time net demand on the network to such low levels that can result in system disruptions.



Given the costs to supply electricity and source it from households, consumers are best off utilising as much of their own generated power as they can through shifting load.

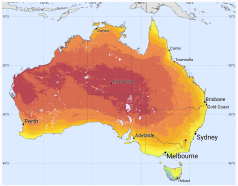
Our objective – help customers shift load to save

Available data

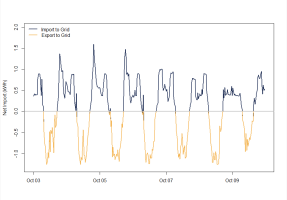
ID	MeterType	House Type	Pool	SolarSystemSize
Customer_1	AMI	House	TRUE	6.6kW
Customer_2	AMI	House	TRUE	NA
Customer_3	Basic	House	FALSE	5kW

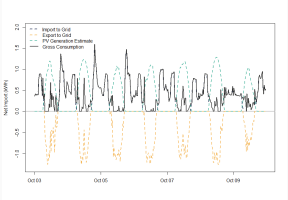
46,172 customers that meet the criteria (AMI meter, pool and solar)

- 4.5% of residential accounts
- 33% of premises with pool



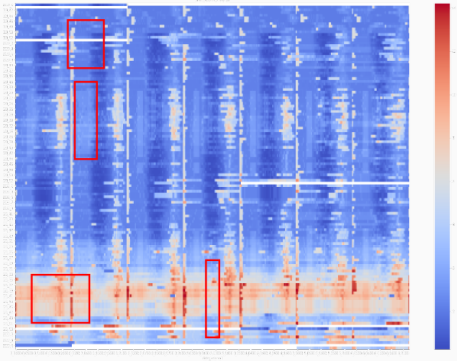
Solar irradiance data for various locations in Perth metro

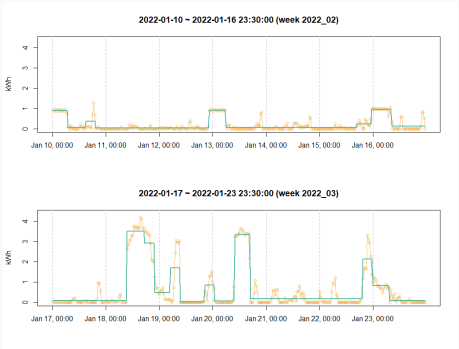




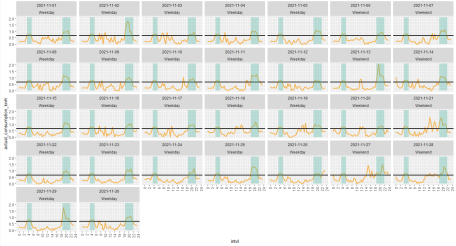
(new) Pool pump size and energy consumption information

Model selection – an iterative process in itself





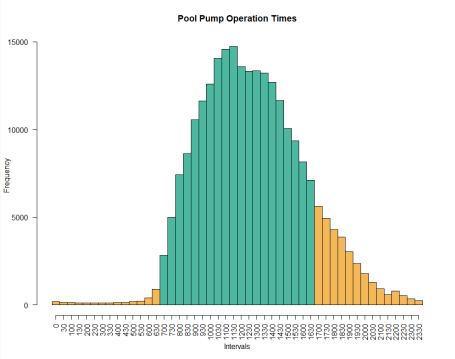
Model evaluation demonstrates viability and value



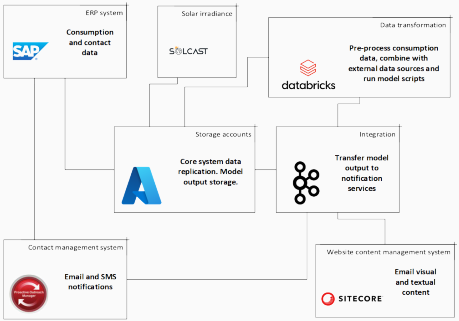
Volunteering employees confirmed initial results

- Volunteer A: 0.6kW pump between 6am-10am & 2pm-6pm
- Volunteer B: 1.5kW pump between 7am-1pm
- Volunteer C: 1.2kW pump between 8:30am-12pm & 2:30pm-6pm
- Volunteer D: 0.4kW pump between 8:30am-5pm
- Volunteer E: 1.2kW pump between 11pm-5am
- Volunteer F: 0.6kW pump between 8am-10am & 1pm-7pm

We find 14% of pool owning customers have an opportunity to adjust their pool pump run times, saving about AUD 70 per year.



Bringing it to customers requires cross-functional collaboration



In summary

- Working with awesomely talented **people**
- Finding **value** both for the organisation and for consumers in Western Australia
- Delivering data science in a **cyclical process** of
  1. Aligning business objectives
  2. with data
  3. using the right model,
  4. evaluated against the business objectives,
  5. and deployed to the end beneficiaries.

Thank you!