

Techlauncher - Audit 1

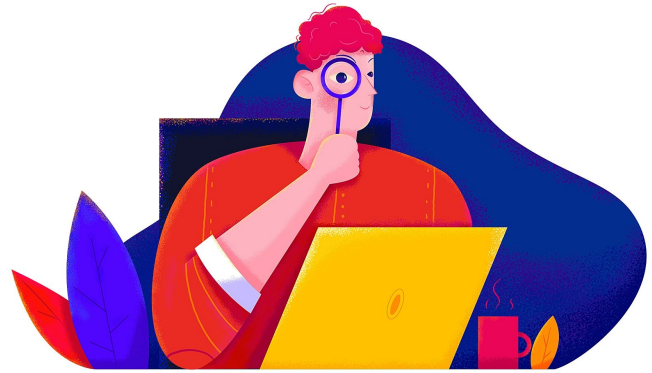
Project: IO Energy



About our Client

IO Energy is an energy company located in Adelaide, South Australia.

Intension: They hope to use a time-of-use pricing to reward customers for using more clean energy to reduce carbon emissions, by providing an 80% discount on electricity that is used between 10am and 3pm.



ioenergy

The TechLauncher Team

TEAM	
Name	Main Role
Xi Chen (Chloe)	Spokesman, Client Contact, Scheduling, UI Designer, Front-end Developer
Jingyi Wang (Shirley)	Deputy Spokesman, Project Manager, Data Analysis and Visualisation
Qixuan Ren (Natalie)	Backend Developer, Documentation
Yifei Tao (Katherine)	Data Analysis, Documentation
Yuxin Chen (Kevin)	Backend Developer, Database Administrator, Quality Control

Contents

The Problem

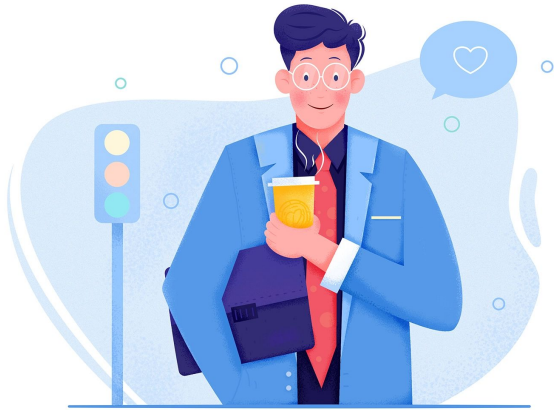
Project current state

The Objectives & Deliverables

Our plan

Details





The problem

General Background

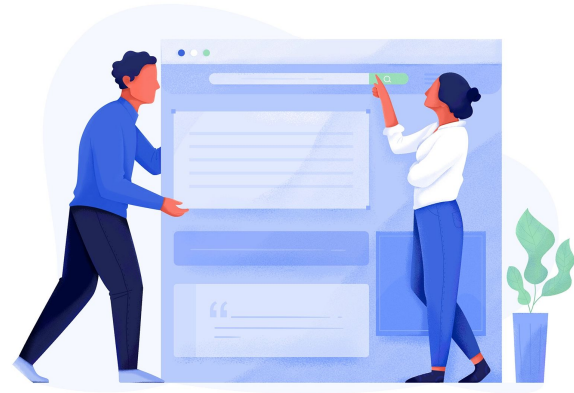
- Solar and wind energy are relatively cheap and environmentally friendly sources of power.
- Last year, 60% of South Australia's electricity was generated by renewable energy.
70% during the daytime was renewable energy,
Only 38% at night was renewable energy.

This Project

- Our client wants to obtain more customers through improvements on product and service.

Current project state

- User research & stakeholder analysis on energy consumers.
- A database for existing customers' data management and storage using PostgreSQL.
- A dashboard template to show analysis results of customers' electricity usage has been enabled using AWS for internal use.
- Client is trying to apply machine learning algorithms to provide better analysis.



The Objectives & Deliverables



THE MAIN TASKS		
No.	Objectives	Deliverables
1	Visualisation of data	An interactive UI dashboard
2	Help customers know their bill better	Data analysis on usage pattern
3	Help customers choose better plans	Using machine learning to make predictions of customers' future usage and provide suggestions based on the result.



Our Plan

Milestones

▼ IO Energy

▼ ☰ Phase 1 - Project Research & Set up

- 1.1 - Initial background research
- 1.2 - Set up working environment
- 1.3 - Research from client side
- 1.4 - Repo set up
- 1.5 - Machine Learning Research
- Research Done

▼ ☰ Phase 2 - UI design

- 2.1 - UI layout design
- 2.2 - Frontend Design
- Front-end Done

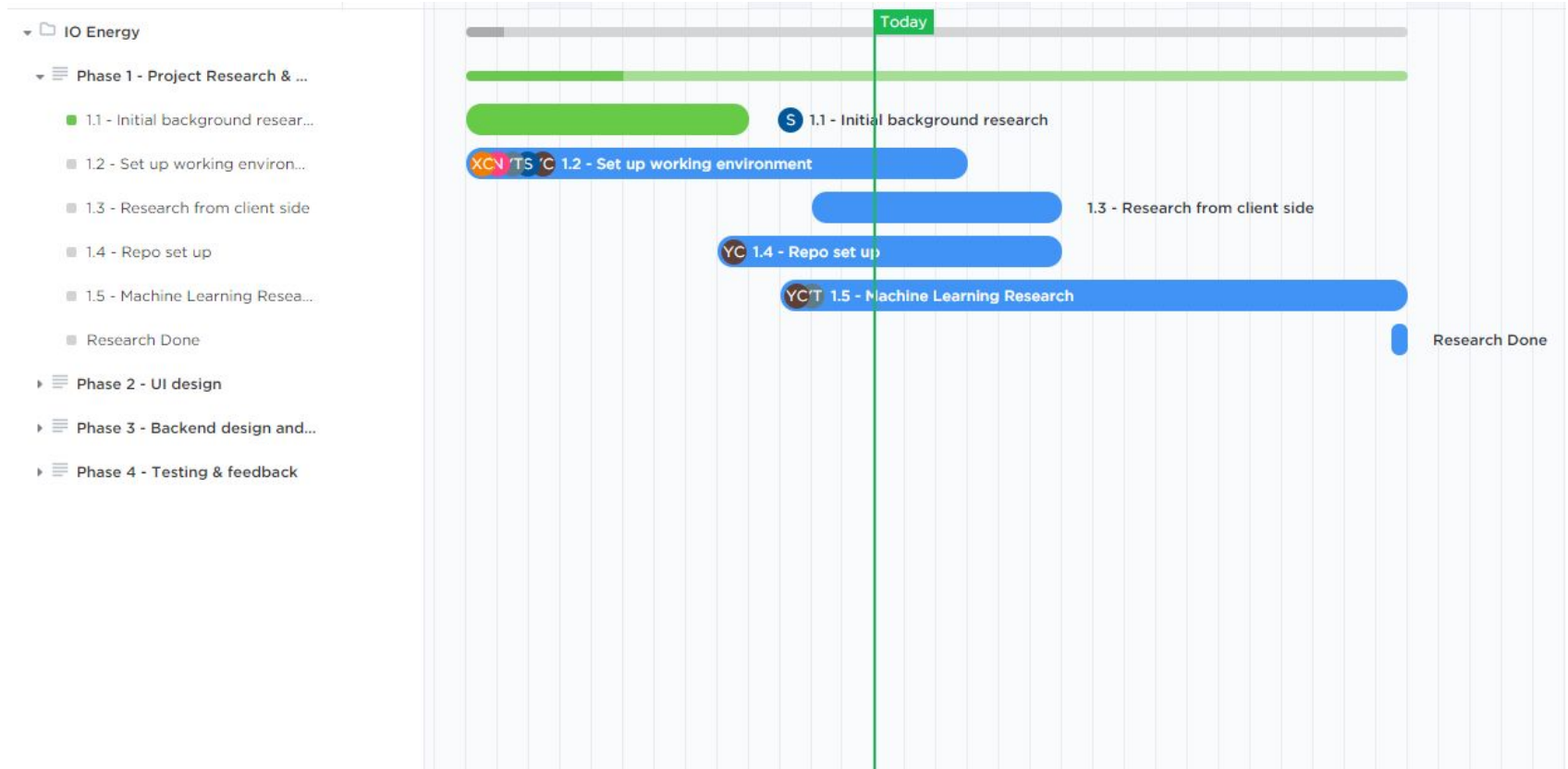
▼ ☰ Phase 3 - Backend design and collaborate

- 3.1 - DB design & research
- 3.2 - DB implementation
- ▼ ■ 3.3 - Machine Learning Research
 - 🔗 3.3.1 - Machine Learning Research
 - 🔗 3.3.2 - ML model setup
 - 🔗 3.3.3 - Training & Testing
 - 🔗 3.3.4 - Review & Modify
- ▼ ■ 3.4 - Backend part
 - 🔗 3.4.1 - API Design
 - 🔗 3.4.2 - Backend interface implementat...
 - 🔗 3.4.3 - Collaboration
- Back-end Done

▼ ☰ Phase 4 - Testing & feedback

- 4.1 - Client feedback & User-end feedback
- 4.2 - Review features
- 4.3 - Accomplish suggestion and plan
- Testing & Final Review

Scheduling - Gantt Chart



Details

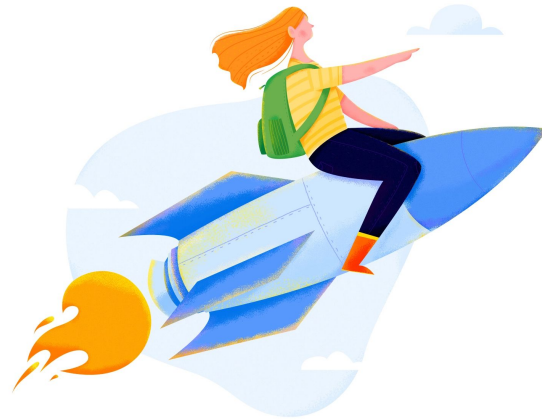
Stakeholders & interaction

Tools

Constraints

Risk & Potential Costs

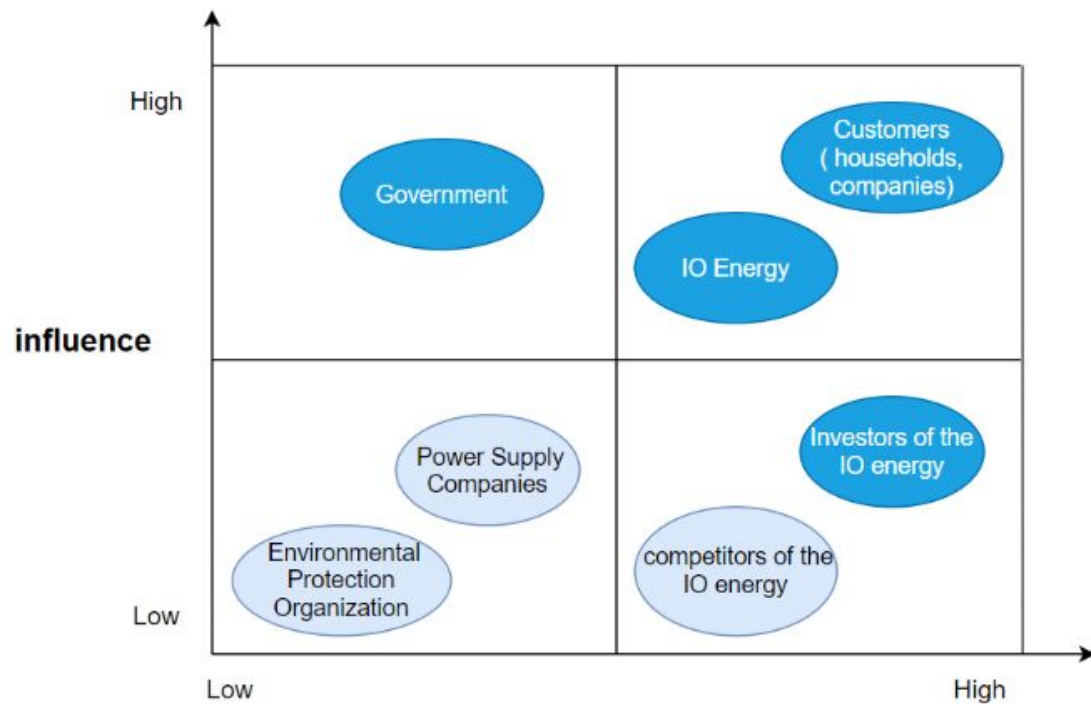
Resources



Key Stakeholders

- **Customers:** get better electricity plan or advice to reduce electricity expenses...
- **IO Energy company:** gains revenue from customers, provide customers service...





- Primary stakeholders
- Secondary stakeholders

Interaction

- Regularly meet with Rob Morris (Corporate founder of IO energy)
- Email
- Zoom meeting
- Tutorial



Tools

Google docs

- Project scheduling
- Task assignment



Github

- Repository (codes, documents)



Zoom

- Team meeting



Constraints

- IEEE standard
- Data privacy
- Intellectual Property Agreement
- COVID-19



Risks and Potential Costs



Risks

- **Technical issue:** difficulties in implementation and environmental setting
- **Communication issue:** remote meetings lead to poor communication



Potential Costs

- Time costs
- Server costs

Resources

- Client contribute some ideas or information about IO energy at weekly meetings
- Existing market research
- Internet: some technology or market and related information can be found
- Access to AWS, database, etc.



Any Questions?



References

Colour for Graphics: #4158EA

All graphics shown in this slide was sourced from Uran Duo. [License](#)