PhD Thesis: Table of Contents plan

[handwritten top: Grid vision → Grid Plan / Deal with its / · Simulation } — key bits. / · Predictions]

Abstract.

Introduction
- Motivation
- Research questions and methodology
- Contribution   *[handwritten: what have we done?]*
- Thesis organisation and structure
- Related publications
     - Optimising energy and overhead for large
parameter space simulations (IGSC 2019, accepted) *[handwritten: upskill me.]*

[handwritten left: Explain the / whole concept.]

Background *[handwritten: Justify why that paper was written.]*
Energy transitions
[handwritten left: - on energy markets / ⌐ Explain the / communities to / each other. / Not huge.]
- ~~Chapter summary~~ Prologue
- Introduction
- Past of Energy Transitions (0%)
- Present of Energy Transition (0%)
- Future of Energy Transitions (0%)
- Conclusion
     [handwritten: For CompSci and Energy people. or MC, Simulation, Energy markets.]

Literature Review *[handwritten: → Whole space]*
- ~~Chapter summary~~ Prologue
- Introduction to energy modelling (90%)
- IAMs (35%)
- Optimisation models (60%)   *[handwritten: Whole field.]*
- Agent based models (85%)
     - ElecSim : Monte-Carlo Open-Source Agent-Based
Model to Inform Policy for Long-Term Electricity Planning (e-Energy
workshop 2019, accepted)
     - Conclusion

[handwritten right: table expand ... items. + table drawing]

[handwritten: Which from paper? | Which added in? → Graphs? / Experiments?]

ElecSim Model
- ~~Chapter summary~~ Prologue
- Introduction and motivation (100%)
- Architecture (95%)
[handwritten left: Point out / which bits / added in.]
     - ElecSim : Monte-Carlo Open-Source Agent-Based
Model to Inform Policy for Long-Term Electricity Planning (e-Energy
workshop 2019, accepted)
[handwritten left box: Go to reviews and add in]
- Validation and performance (95%)   *[handwritten: Which bits to jot down.]*
     - ElecSim : Monte-Carlo Open-Source Agent-Based
Model to Inform Policy for Long-Term Electricity Planning (e-Energy
workshop 2019, accepted)
     - Long-term electricity market agent based model
validation using genetic algorithm based optimization (e-Energy
2020, submitted)
     - Conclusions

Applications
- ~~Chapter Summary~~ Prologue.
- Introduction
- Scenario testing (15%)
     - Some preliminary scenarios in: ElecSim : Monte-
Carlo Open-Source Agent-Based Model to Inform Policy for Long-Term
Electricity Planning (e-Energy workshop 2019, accepted)
     - Carbon optimisation (90%) *[handwritten: Mention IGSC here.]*

                  – Optimizing carbon tax for decentralized
electricity markets using an agent-based model (e-Energy AMLIES
workshop 2020, submitted)
                    – 30-minute + day ahead prediction (70%)
                          – Segmenting residential smart meter data for
short-Term load forecasting (e-Energy 2018, accepted)
                      – As yet untitled (IGSC 2020, to be submitted)

Other models
        – Chapter summary
        – Introduction (limitations of ABMs) (70%)
        – FTT:Power model with Reinforcement Learning for
Investment (5%)
                – As yet to see whether will be published and where
        – Conclusion

Conclusions
        – Thesis Summary
        – Limitations (40%)
        – Future Research Direction (70%)

{ Keep short.

– key findings.

○ Short and punchy for achievement

References

Appendix

– Get rid of background.
– Bit of a gap.
JB

Build up a Smaller size document.