

Bachelor Thesis on Optimizing Proposed Island Microgrid in Thailand

Before departure

I applied for the MFS as it seemed like a great opportunity to expand my degree into a global context and deep dive into the subjects of my degree in a different context from Sweden. My thesis partner and I heard about the ongoing project of electrifying a small Thai island through a microgrid from a friend who wrote her bachelor's thesis as a MFS in Thailand last year. We got interested in the project and decided to apply. Before departure, a visa to stay in Thailand for up to 60 days had to be approved and vaccination shots taken.

Upon arrival

When arriving in Bangkok we were greeted by our contact person on site. He had organized for us to visit a microgrid similar to the one planned on the island. Right before we came to Thailand there was a harsh storm in the area for the planned visit and the visit was pushed back. When the infrastructure had been restored and we were able to go again the air quality in the area was very poor and the public was recommended to stay inside at all times. We therefore ended up not being able to visit the existing microgrid. We did, however, visit the island for the planned microgrid that centered the study. As our first priority had been to visit an existing microgrid, visiting the island was pushed back and we arrived there about 5 weeks into our visit. This was done under own authority, and not in connection to any organization. There was therefore no organized reception.

Financials

It was generally cheaper in Thailand than in Sweden, especially services and Thai food. Companies, brands and chains that we can find in Sweden do however have pretty much the same prices as in Sweden. Therefore, my best tip for saving money is to eat, drink and shop as the public does and to avoid European or American foods.

Accommodation

We found our accommodation through AirBnb, where it was easy to find long term rentals. We lived in a two bedroom apartment close to the subway in a friendly neighborhood for roughly 10,000 SEK per month (5,000 SEK each). Had we started looking for accommodation earlier, or sized down, we surely would have found cheaper alternatives.

Project

The purpose of the project was to optimize a microgrid for the small island Phaluai and a typical day consisted of researching microgrids and the island, and carrying out the optimization. We then wrote down our findings in the report. The study conducted by us is now finished but the authority's larger project of microgrid implementation on Phaluai will continue for the years to come. During the project several questions arose, and were sometimes discussed with our contact person. At the end of the project the contact person listened in when we presented the project for the class.

Country

The culture in Thailand was very different from in Sweden and some parts were confusing, such as when and how to bow. However, we met many kind people who were interested in teaching us the local customs.

Leisure and social activities

There are lots of things to do in Bangkok and Thailand. In my free time I often went to the different markets and visited the local park. It was easy to meet locals who wanted to talk.

Sustainability

We took a long flight in order to get to Thailand, which wasn't sustainable. Once there, we lived fairly similar to at home. It can be hard to live sustainably in a large city. One way I tried to make my stay more sustainable was by walking and using public transport instead of a cheap taxi and by opting for local foods. The project was connected to the SDGs, mainly *Affordable and Clean Energy* as the project is highly connected to increased electrification. Increased electrification, and the project, is also connected to *No Poverty* and *Good Health and Well-Being*. *No Poverty* because access to electricity creates business opportunities and increases efficiency. The implementation of a microgrid would likely also lead to cheaper energy on the island. *Good Health and Well-Being* because better access to electricity can lead to increased indoor air quality and better access to health knowledge.

Other recommendations and observations

I would highly recommend doing a MFS as it is a great opportunity to deep dive and learn more about both your subject and the culture in the specific country, while also making connections and meeting people from another part of the world.