

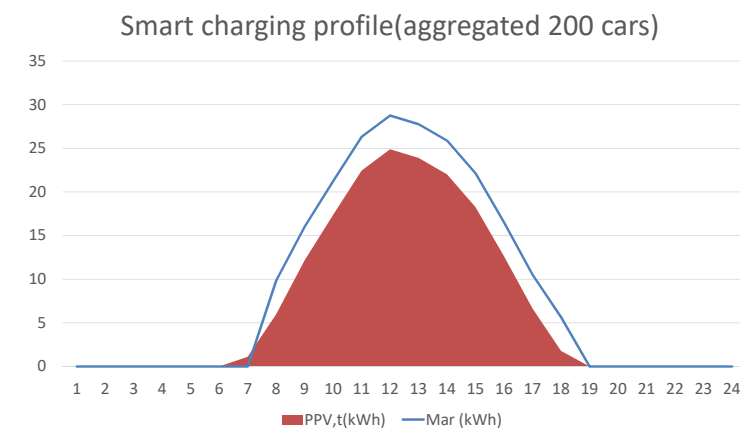
Research Topic	Optimal PV-EV sizing with SCSB	Graduate School of Engineering
Host University	Uppsala University / Uppsala / Sweden	Architecture, Civil Engineering and Urban Design
Duration	From September 22 to December 13, 2022	KOBAYASHI Reina

Summary of the Research Activities

When comparing the amount of solar power generation and the rate of electric vehicle use between Sweden and Japan, the rate of electric vehicle use is extremely low in Japan, even though the amount of solar power generation is higher in Japan. Therefore, I thought that Japan, which generates more solar power than Sweden, should be a society where electric vehicles can be used more. To prove this, I decided to calculate the SCSB used in the Swedish study under Japanese conditions. SCSB is the self-consumption-sufficiency balance and represents the balance between self-consumption (SC) and self-sufficiency (SS). When the SCSB ratio is high, it means that the amount of solar power generation and the amount of electric vehicle recharging are in balance. The results showed that the SCSB value was as high as 0.88 when the smart charging system, which recharges the right amount of electricity at the right time under the control of AI, was used.



In the Laboratory



SC	SS	SCSB
0.99	0.80	0.88

SCSB (Smart charging)

College Life, Friends and Others

At this university, I was able to make friends from many different nationalities in the dormitories and laboratories. I went to sightseeing spots, ate out, and shared each other's native cuisines. Because of them, I was able to enjoy myself and devote myself to my research until the end of my stay. I was very happy to be able to study here.



指導教員講評

我が国の今後の交通計画に必要である電気自動車に関わる給電のあり方を、スマートシティ化が進むスウェーデンの取り組みを踏まえて検討した。

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