Models and tools to plan and manage distributed energy resources (DER)

Mohsen A Jafari
Rutgers University, USA

A vision shared by many experts is that future communities (residential, commercial and industrial) will be nearly self sufficient in their energy production and will adopt distributed energy resources, energy storage and sustainable demand side management measures. It is also expected that consumers will be able to respond to real time pricing of energy in retail market and intelligently plan for their energy use. In this talk, we will discuss models and tools that support DER planning and control for such energy smart communities and systems. These models integrate engineering features of distributed resources, demand side dynamics and externalities such as weather patterns, price of fuel and energy market dynamics. We also argue that planning for such capital-intensive systems should take into account both short-term and long-tem volatilities. We conclude our talk with some notes on energy networks and hubs of the future.

Detection system heavy volume and estimates for inventory bunch of fresh fruit bunch (ffb) of palm

Giska Setya Priaji
Bogor Agricultural University, Indonesia

One of the potential of agricultural productsto be developedare oil palm(Elais guinensousJack) that has an important role in the contribution of oil commodity exchange in Indonesia. Palm oils plantations of oil in the form of CPO (Crude Palm Oil) and PKO (Palm Kernel Oil) which can be processed to create a wide range of commercially valuable products with higher profit. Results of processing palm oils widely used as industrial raw materials. Indonesia has one of the largest palm oil producer in the world, and continue to increase production, often carried out the expansion of the planting area, rehabilitation of existing gardens, as well as intensification. The quality and quantity of products produced from palm oil can not be separated from the activities of production and processing of the commodity. The goal made SIDEVOBER to develop a detection system volume and heavy bunches of palm ultimately beneficial for crop reporting FFB. The equipment used in this activity can be divided into two categories, namely hardware and software. Hardware equipment includes cameras, laptops, and a proximity sensor, while the software used is Visual C# and Java. Steps being taken areas follows, as problem identification, mathematical analysis, manufacture of detection FFByields, making the RGB (Red, Green, Blue) values of static and dynamic calibration test weight and volume, functional testing, performance testing. Image processing techniques that include the dilation process, binarization, and managed to give a perfect binary image.