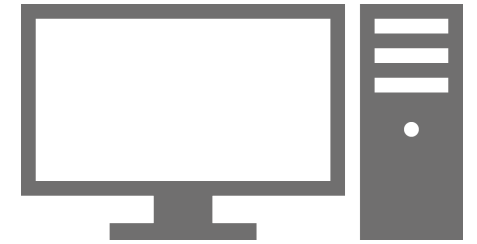
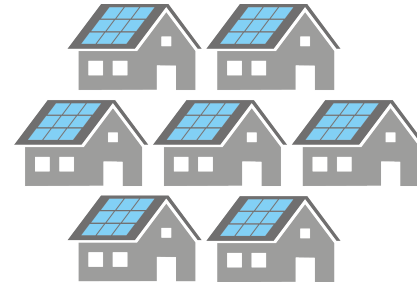
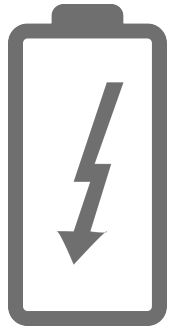


Integration in the Electricity Network

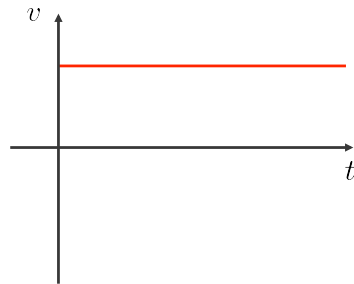
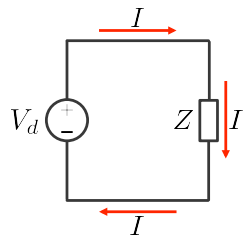
Demand Side Management and Microgrids

Dr.ir. L.M. (Laura) Ramírez Elizondo

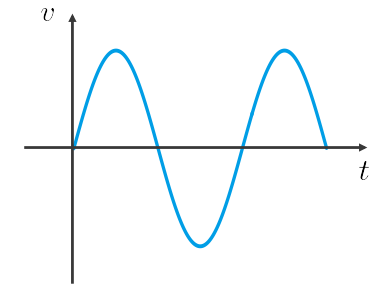
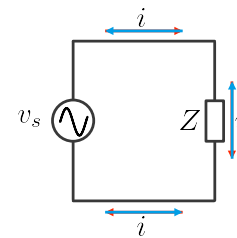




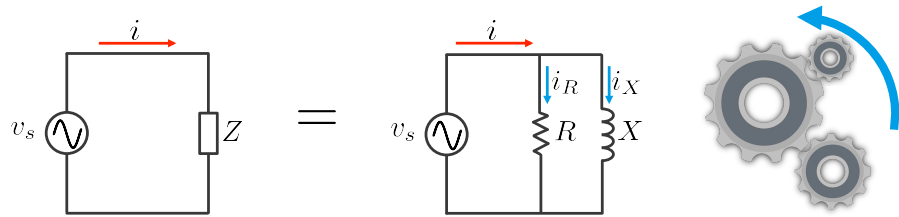
Direct Current



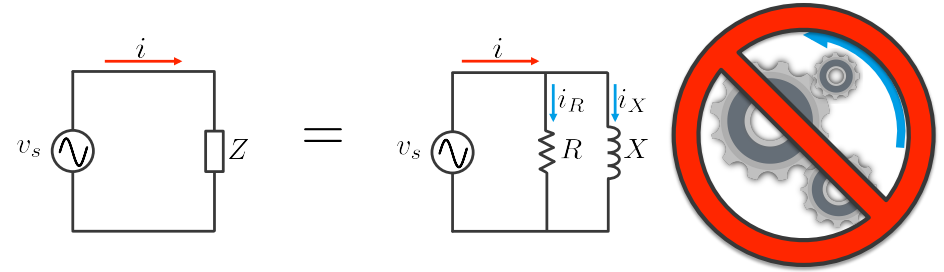
Alternating Current



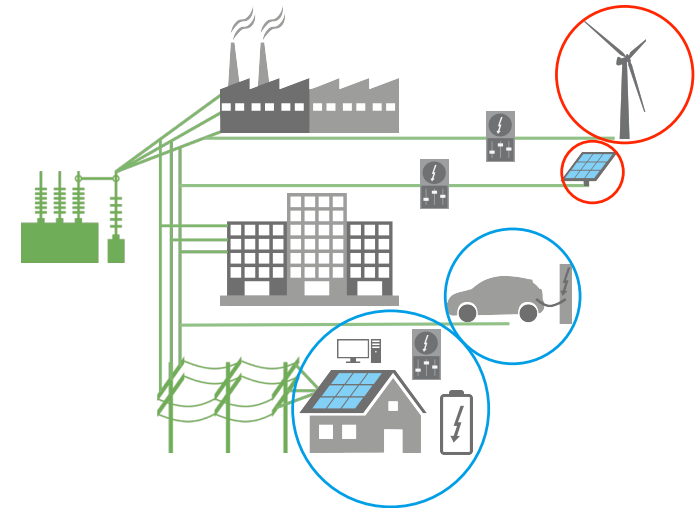
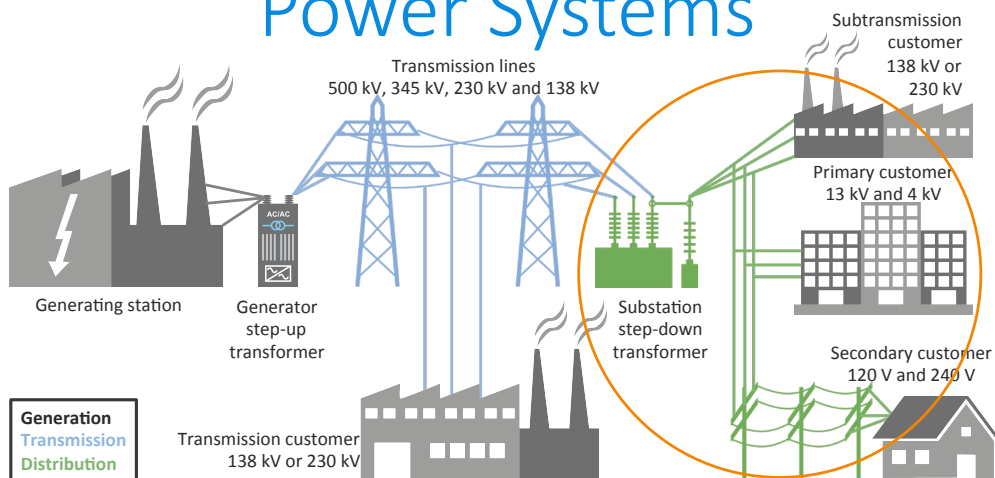
Active Power



Reactive Power



Power Systems



Demand Side Management

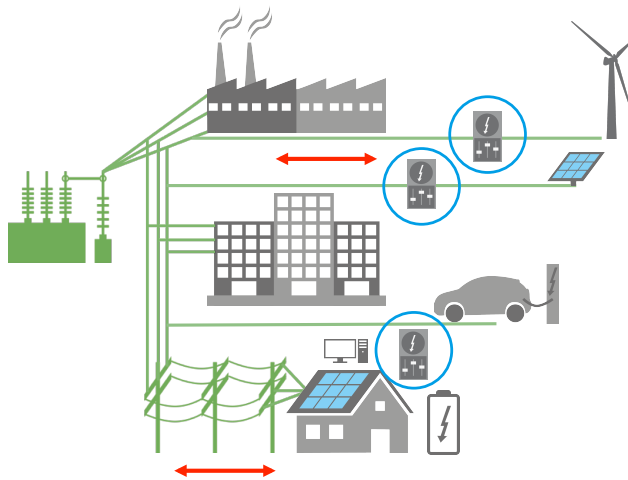
“[Demand Side Management aims] to reduce energy consumption and improve overall electricity usage efficiency through the implementation of policies and methods that control electricity demand”

Source: Hallberg, P. et al. (2011). Views on Demand-Side Participation: Involving Customers, Improving Markets, Enhancing Network Operation, 23.

Demand Response

“[Demand Response demand response makes use of] incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized”

Source: Hallberg, P. et al. (2011). Views on Demand-Side Participation: Involving Customers, Improving Markets, Enhancing Network Operation, 23.

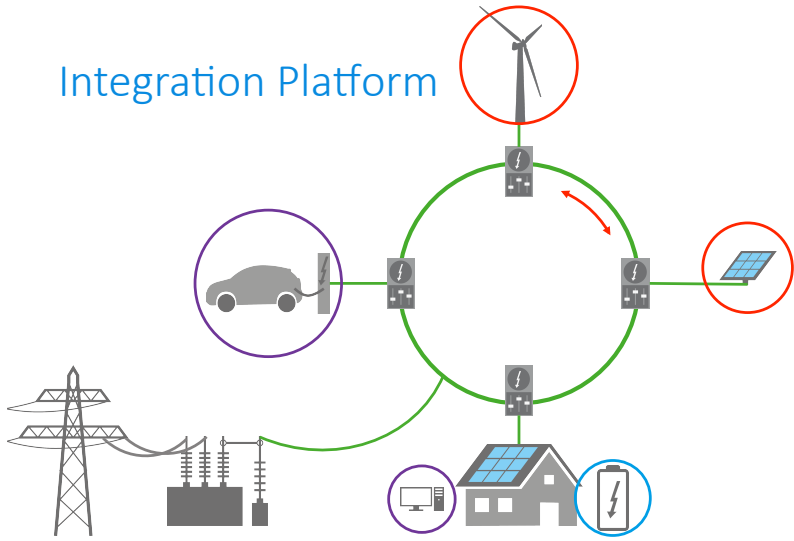


Microgrid

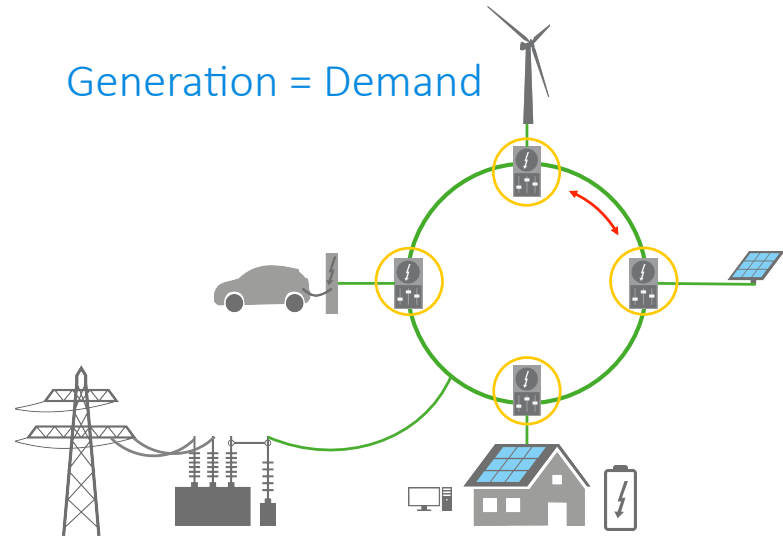
“Electricity distribution systems containing loads and distributed energy resources that can be operated in a controlled, coordinated way either while connected to the main power network or while islanded”

Source: CIGRÉ. Working Group C6.22, Microgrids Evolution Roadmap, Microgrids 1: Engineering, Economics, & Experience

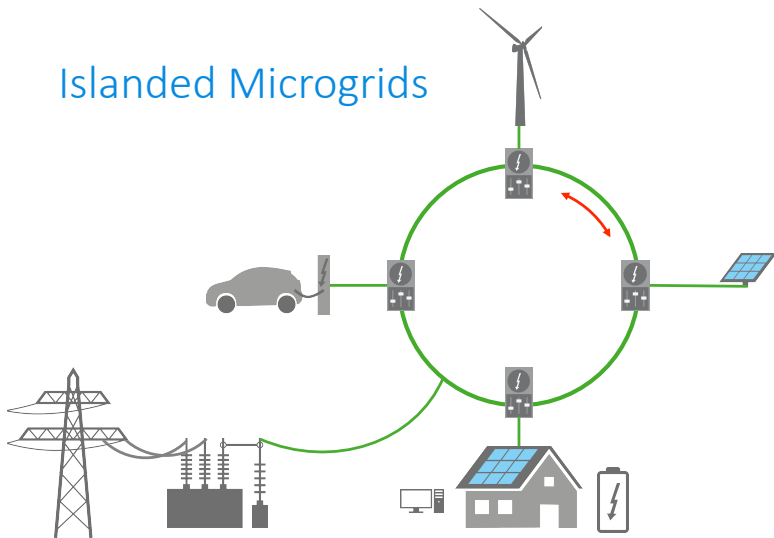
Integration Platform



Generation = Demand



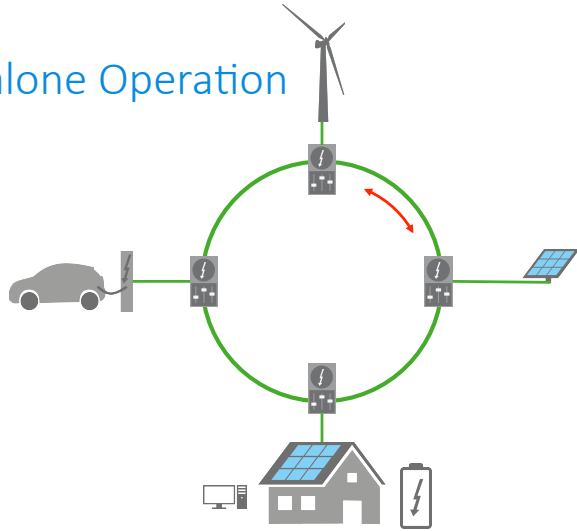
Islanded Microgrids



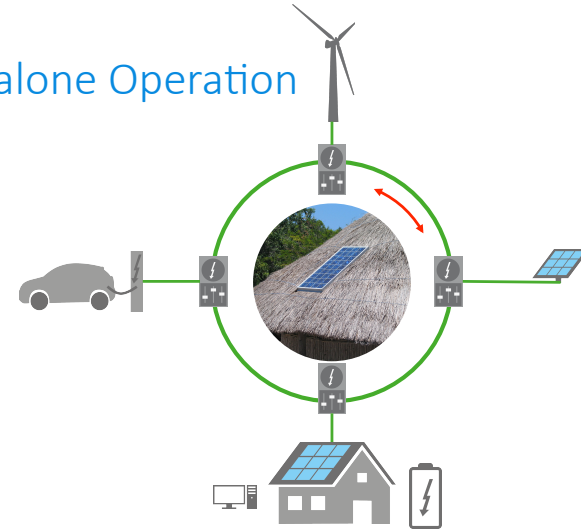
Business Opportunities



Stand-alone Operation



Stand-alone Operation



Thanks for your attention!

