



Prosumers are the

▶ Way

Senior Design Project

# The Team

## Senior Team:

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## Sponsors:

Avista

## Clients:

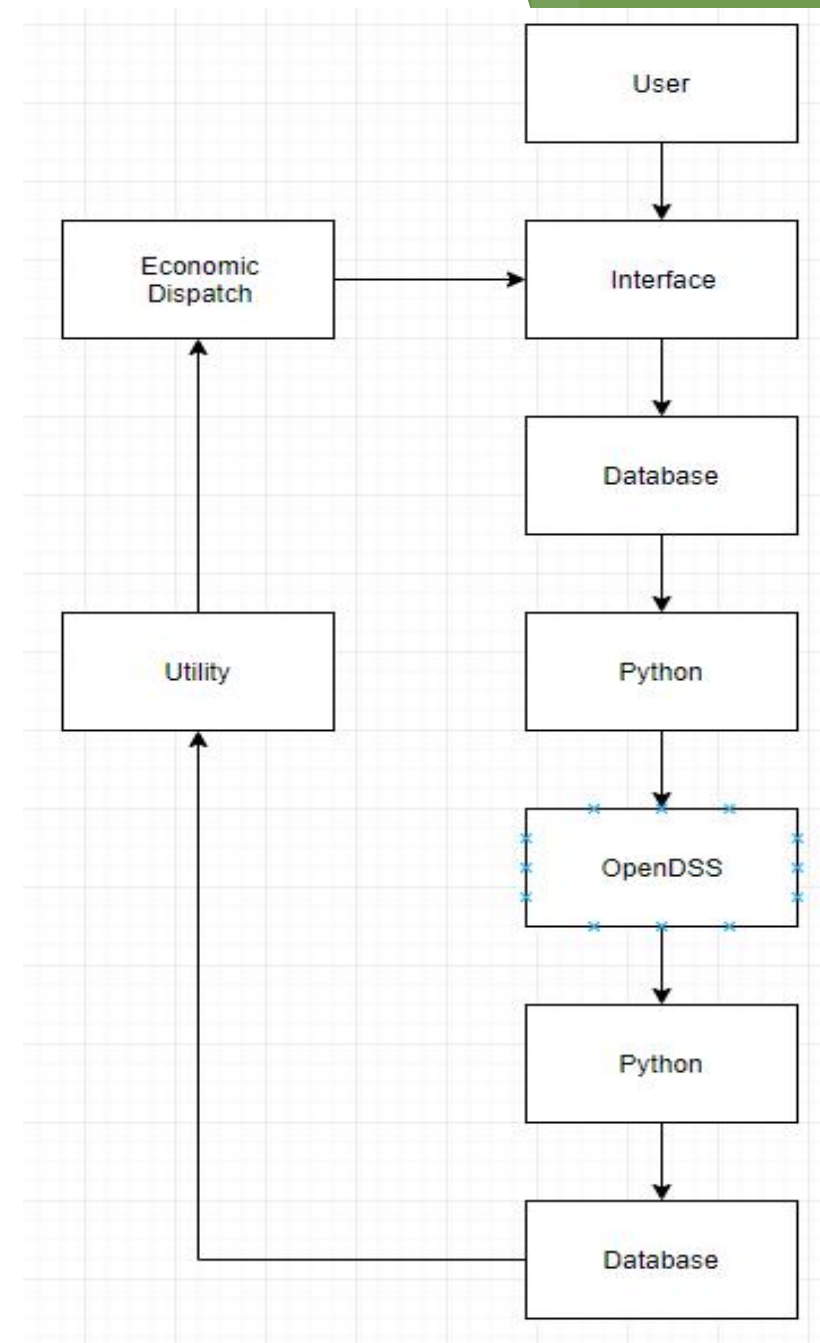
Dr. Yacine Chakhchoukh  
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Leon

## Advisors:

Dr. Herb Hess  
Dr. Brian Johnson  
Dr. Hangtian Lei  
Dr. Li Feng  
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# Objectives

- Software application that allows prosumers and consumers to trade power on-demand.
- Implement a small distribution system model to check the transactive energy in a network with varying sources of renewable energy.



# Value Proposition

- Data analytics to increase efficiency in the distribution system
- Profitable electric power pricing for Avista and the prosumer
- Possibility of semi-automated trading of power

# Area of Learning

- How OpenDSS works and the language it uses to implement system elements.
- Implementation of renewable energy such as PV's, EV's and wind.

# Product Requirements

We are using OpenDSS to handle the modeling aspect of this project. The reason is, it's open source so we don't have to deal with licensing.

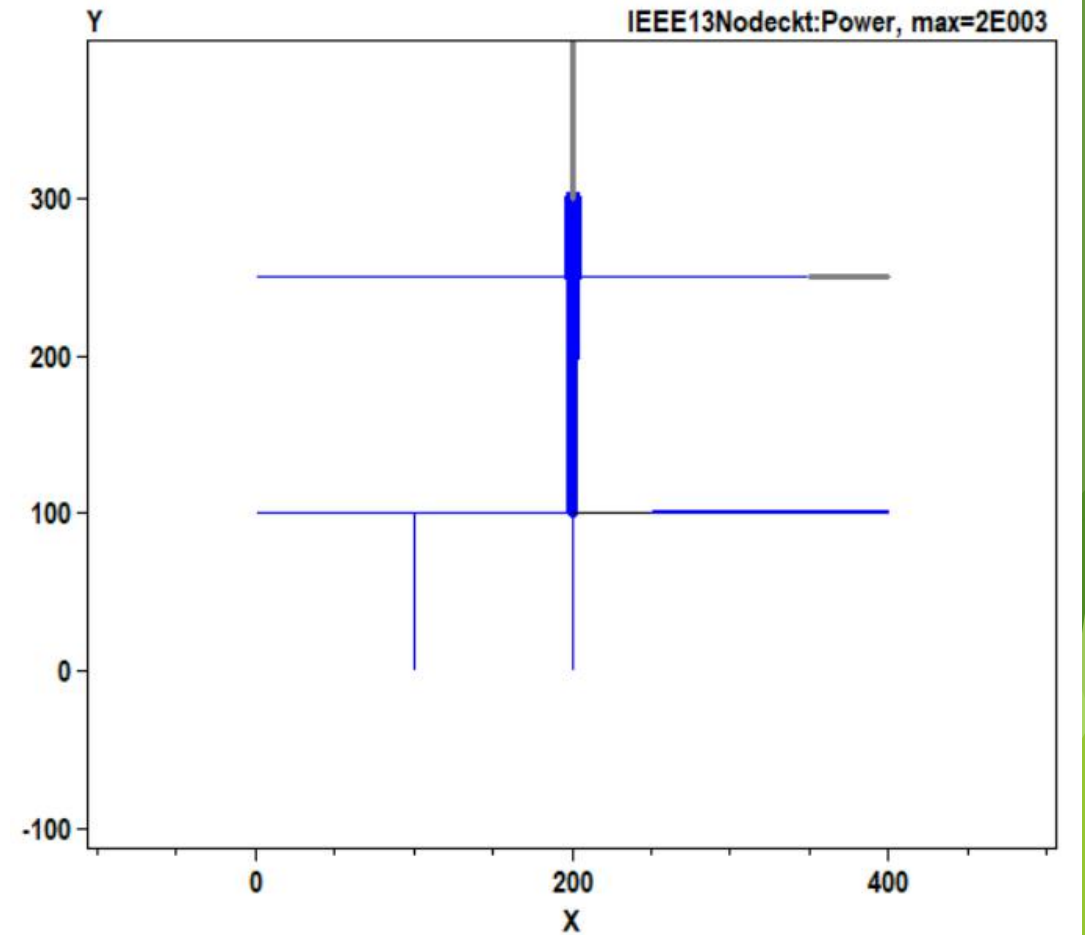
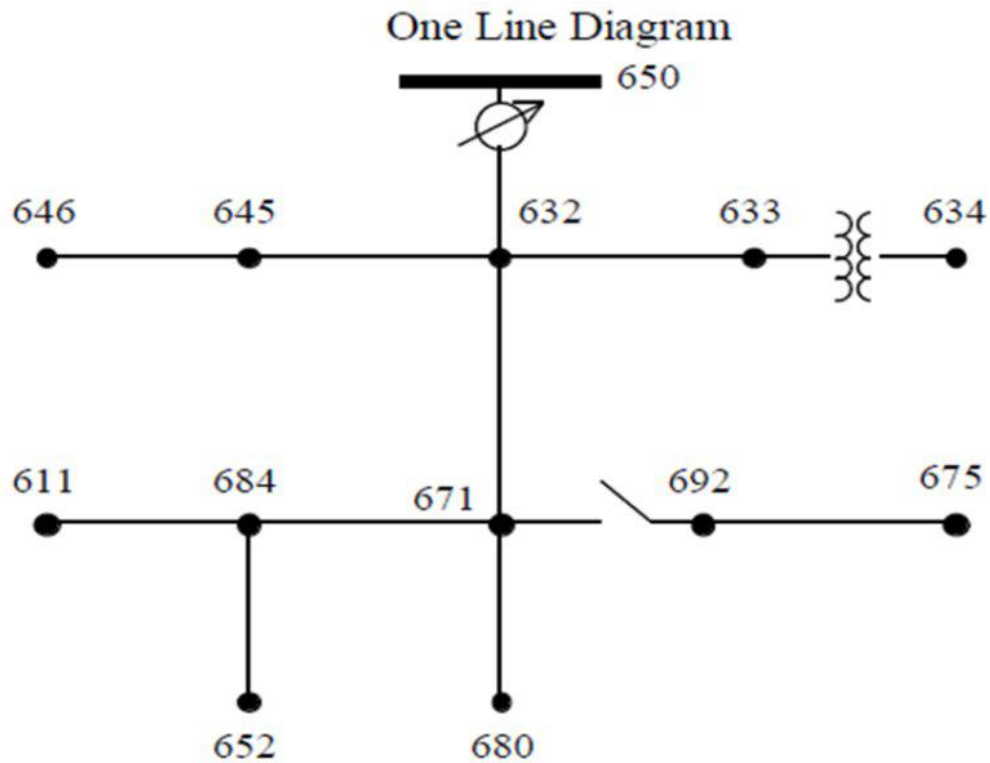
The OpenDss Model needs to be changed dynamically.

Since we are dealing with renewable energy, we will have to consider how to implement PV panels, EV's, and wind in our model.

# Budget

13-Avista project Budget - Fall/Spring								
Last updated		11/26/2018						
2018								Item
Expense items	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Equipment/Tools;								
Travel:								
Trip to Spokane								\$150
Supplies/Parts/Services:								
Poster								\$100
							Totals	\$250

# IEEE 13-bus Distribution Model





# Updated Schedule

		Project:	Prosumers are the Way											
		Last Updated:	11/29/18											
		Year	2018											
		Month	November				December				January			
Task Description	Duration	Assigned	11/5	11/12	11/19	11/26	12/3	12/10	12/17	12/24	12/31	1/7	1/14	1/21
Vocabulary Sheet	8 weeks	11/9	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow						
Understanding OpenDSS	8 weeks	10/23	Yellow				Yellow	Yellow						
Snapshot #2				Green	Green									
Implement Congestion Flags	4 weeks	12/3				Yellow	Yellow	Yellow						
Data that is needed	5 weeks	12/3				Yellow	Yellow	Yellow	Yellow					
Implementing Loads and Generators	7 weeks	12/10					Red	Red	Red	Red	Red	Red	Red	
Implementing PV's	8 weeks	12/11					Red	Red	Red	Red	Red	Red	Red	Red
Implementing Storage	9 weeks	12/12					Red	Red	Red	Red	Red	Red	Red	Red
Implementing EV's	10 weeks	12/13					Red	Red	Red	Red	Red	Red	Red	Red
Implementing Wind	11 weeks	12/14					Red	Red	Red	Red	Red	Red	Red	Red
Design Review	4 weeks	1/14											Red	Red