

Planned
Development and Testing
Fully implemented (on-line or study mode)

**Recovery Act Smart Grid Investments  
SYNCHROPHASOR PROJECT STATUS  
1 November 2014**



INSTALLED	ATC Comm.	ATC PMU	CCET	Duke Energy	Entergy	Florida P&L	Idaho Power	ISO-NE	Lafayette	Midwest Energy	MISO	NYISO *	PJM	WECC / Peak Reliability
PMU Devices	N/A	49	19	103	49	45	8	73	31	7	260	41	301	393
PMU Substations	69	45	16	52	49	45	4	40	31	7	166	41	85	134
PMU Signals	110 miles fiber	620	19	1,872			100	383			1,928	759	2,698	3,032
PDC Count		45	3	4	9	13	0	9	3	1	40	11	23	57
<b>REAL-TIME APPLICATIONS</b>														
Oscillation Detection														
Phase angle monitoring														
Frequency Event detection														
Voltage stability monitoring														
Event Management, Alarm, Restoration														
General Event Detection														
Islanding detection														
Wide area awareness/visibility														
<b>STUDY MODE APPLICATIONS</b>														
Model validation & improvement														
State estimation model improvement														
Power plant model improvement														
Post event analysis														
Operator training														

\*NYISO also installed 938 MVAR of switched capacitors