

# 2011 Summer Capacity Survey

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# Summer Actions

- Historic/Forecasted Peaks
- Capacity Supply Assessment
- Generation Resources
- Demand Side Programs
- Efficiency Programs
- Supply Assessment
- Emergency Preparedness

## WVPA Membership



- 28 Distribution Cooperatives in 4 states
- Operates in both MISO & PJM
- Load in seven Local Balancing Authorities
- Not segregated into separate state operating companies
- Reliability First and SERC Regional Entities

# 2010 Historic Peak Demand

## Summer Peak 2010

Date: 7/23/2010

Time: HE 17:00 EDT

Peak Metered Demand System: 1,839 MW

Peak Metered Demand Indiana: 1,269 MW

WVPA's average annual peak growth has been 5.1% and energy growth has been 7.7% over the past five years. The portion of that growth is the result of the addition of a distribution cooperatives to the membership of WVPA over that period. The Indiana portion of average annual peak growth has been 1.4% over the past five years.

## 2011 Peak Demand Projections

(MW)

	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
Indiana	1,115	1,271	1,220	1,109
Non-Indiana	<u>524</u>	<u>585</u>	<u>591</u>	<u>536</u>
<b>Total Peak</b>	<b>1,639</b>	<b>1,856</b>	<b>1,811</b>	<b>1,645</b>

This is WVPA's forecast of total coincident peak demand and not necessarily the same as the capacity requirements set forth in the MISO and PJM tariffs.

## 2011 Capacity Reserve Margin

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
ICAP	18.8%	17.2%	15.9%	17.8%	15.4%
UCAP				8.4%	8.4%

**PJM - Secured and Supplied Capacity Requirements in RPM Market**

**MISO – Met Module E Requirement**

2011 ICAP Reserve Margin: **16.9%**

## 2011 Power Supply Resources (MW)

	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>
Owned	927	927	927	927
Purchase Unit Contingent	250	250	250	250
Purchase Schedule	481	508	502	479
Purchase Shaped	39	39	39	39
Purchase 7x24	280	280	280	280
Purchase 5x16	50	50	50	50
Purchase Wind Turbine	<u>29</u>	<u>29</u>	<u>29</u>	<u>29</u>
Total Energy Resources	2,056	2,083	2,077	2,054

## 2011 Owned Resources

	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
<b><u>Coal</u></b>				
Gibson 5	156	156	156	156
<b><u>Pet Coke</u></b>				
Wabash River 1	200	200	200	200
<b><u>Landfill Gas</u></b>				
Deer Croft 1-2	6	6	6	6
Prairie View 1-2	6	6	6	6
Twin Bridges 1-3	9	9	9	9
Wheeler	1	1	1	1
Jay	2	2	2	2
Liberty 1-2	6	6	6	6
Oak Ridge	3	3	3	3
Earth Movers	4	4	4	4
<b><u>Natural Gas</u></b>				
Holland Energy	300	300	300	300
Lawrence Gen	86	86	86	86
Vermillion Peaking	148	148	148	148
<b>Total Owned</b>	<b>927</b>	<b>927</b>	<b>927</b>	<b>927</b>

# Legacy Demand Response (DR) Load Control

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- Reduces peak demand resources
  - 60,000 Water Heater switches - 20 MW reduction
  - 6,500 AC or Heat Pump switches - 8 MW reduction
  - Misc. – Irrigation, Pool Pumps, Grain Drying, etc. - 10MW reduction
  - Phased out by 2015
- SDI Participates in PJM Program
  - Interruptible Load for Reliability “ILR”
  - Reduces capacity requirements
  - Wabash Valley registers this on their behalf

## DLC Programs

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- 5000 Direct Load Control 2-way Switches
  - Aclara & Cannon
  - Water Heaters, HVAC, Pool Pumps & Irrigation
  - Testing Landis & Gyr and Tantalus
  - Meter Data Management (MDM)
    - Siemens / e-Meter Implementation
    - MV90 Data Points Complete
    - Distribution Coop CIS & AMI Integration
- Program Goal of 50,000 Switches by 2015
  - Estimated Control Capability of 50 MWs

## Energy Efficiency

- 2010
  - C&I energy efficiency grant
  - Residential Heat Pump Rebate
  - Residential Energy Star Clothes Washer Rebate
  - Residential 2<sup>nd</sup> Fridge Recycling Program
  - Residential Energy Audits
  - Energy Advisor Program
  - Touchstone Energy Home
- 2011
  - C&I Prescriptive Lighting
  - C&I Prescriptive HVAC
  - All of the above – except grant program

# 2010 EE Program Wrap-up

## 2010

<u>Program</u>	Unit Goal	Unit Actual	kWh svgs	kW svgs	Lifetime Cost per kWh
Home Energy Audit	281	214	107,000	43	\$0.057
Energy Star Clothes Washer	500	626	428,400	13	\$0.010
Residential Heat Pumps	220	442	866,075	80	\$0.010
Refrigerator Recycling	850	2,187	1,640,250	328	\$0.015
C&I Grants	n/a	10	1,878,154	246	\$0.015
<b>Total:</b>	<b>1851</b>	<b>1,920</b>	<b>4,919,879</b>	<b>710</b>	<b>\$0.014</b>

# 2011 EE Program Projections

## 2011 Projections

Program	Units	As of 5/1/11	kWh svgs	kW Svgs
Home Energy Audit	300	0	150,000	60
Energy Star Clothes Washer	1,000	243	685,000	20
Residential Heat Pumps	600	108	1,200,000	108
Refrigerator Recycling	2,500	545	1,875,000	375
C&I Grants	22	0	1,878,154	246
C&I Prescriptive	-	18	-	-
<b>Total:</b>	<b>4,422</b>	<b>914</b>	<b>5,788,154</b>	<b>809</b>

*unable to predict C&I prescriptive due to nature of program*

*C&I grants are not being offered in 2011*

# EE Programs Environmental Impact

## Cumulative Carbon Dioxide Savings Projections (lbs)

Program	2010	2011	2012	2013	2014
Home Energy Audit	196,880	472,880	748,880	1,024,880	1,300,880
ENERGY STAR clothes washer	788,256	2,048,656	3,939,256	5,829,856	7,720,456
Residential Heat Pumps	1,593,578	3,801,578	6,009,578	8,217,578	10,425,578
Refrigerator Recycling	3,018,060	6,468,060	9,918,060	13,368,060	16,818,060
C&I Grant	3,455,803	6,911,607	10,367,410	13,823,213	17,279,017
C&I Prescriptive	n/a	2	2	2	2
<b>TOTALS:</b>	<b>9,052,577</b>	<b>19,702,781</b>	<b>30,983,184</b>	<b>42,263,587</b>	<b>53,543,991</b>

*\*based on WVPA's fuel mix as of 1/1/11 and 1.84 lbs CO2/kWh*

## Energy Advisor

- Educate residential members on wise use of energy
- Each co-op has an EA on-site
  - 13 at 11 co-ops BPI certified Building Analysts
- Applying sound building science principles can save up to 30% on energy – lowering bills and increasing comfort

## EM&V – Residential Programs

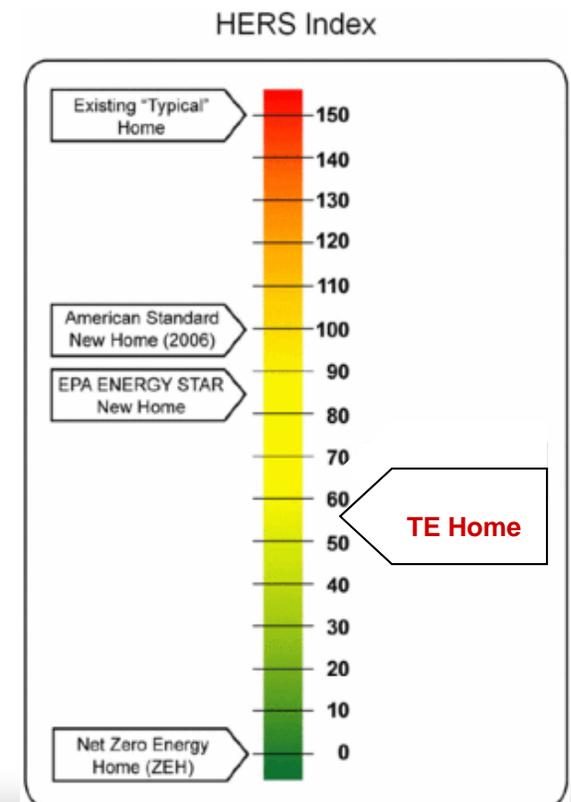
- Written surveys to home audit, heat pump, clothes washer and refrigerator program participants
- 2-3 times per year
- Satisfaction, influence of program, do you still have the measure, did you replace the fridge?
- Adjust deemed savings, if needed

## EM&V – C&I Programs

- On going discussion with co-ops and program participants
- May meter or do on-site evaluation of larger projects
- Adjust deemed savings, if needed

## Touchstone Energy Home

- Energy efficient new home program
- 20 complete; 3 under construction
- Based on Energy Star requirements +
- Co-op provides one-year heating and cooling cost guarantee
- Average HERS: 53
  - LaGrange County REMC, 33/7 with solar panels counted in



## Touchstone Energy Home

- Average home size: 3,200 sq ft
- Average annual heating cost: \$410
- Average annual cooling cost: \$120
- Average CO<sub>2</sub> reduction: 30,312 lbs
- Average SO<sub>2</sub> reduction: 203 lbs
- Average NO<sub>x</sub> reduction: 76 lbs

# Emergency Preparedness

- WVPA operates in seven balance authorities:
  - AEP, Duke, IPL, NIPSCO, Ameren-IL, Ameren-MO, and Consumers
- WVPA operates in two RTO's, MISO and PJM
- WVPA does not directly operate transmission
- Coordinate with balance authorities to provide appropriate WVPA emergency response

# Emerging Environmental Issues

- 316(b) Cooling Water Intake Regulation
- EGU MACT for hazardous air pollutants
- More stringent ambient air quality standards
- Coal Combustion Residual (CCR) Regulation
- Air Transport Rule

# Conclusion

WVPA believes it has adequate resources to meet our member's needs during the summer of 2011