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DUKE ENERGY OHIO INC
REVISED 2010 LONG-TERM
FORECAST REPORT AND
RESOURCE PLAN

DUKE ENERGY OHIO
4901:5-5-04(C)(1)(a)
FORM FE-T7: CHARACTERISTICS OF EXISTING TRANSMISSION LINES

COMMONLY OWNED TRANSMISSION - DEO AND DP&L COMPANIES
TENANTS IN COMMON WITH UNDIVIDED OWNERSHIP, TOTAL MILEAGE GIVEN

CIRCUIT NO. CCD-B	LINE NAME	ORIGIN	TERMINUS	SUMMER CAPABILITY (MVA) NORMAL RATING	SUMMER CAPABILITY (MVA) EMERGENCY RATING	WINTER CAPABILITY (MVA) NORMAL RATING	WINTER CAPABILITY (MVA) EMERGENCY RATING	VOLTAGE (KV) OPER. LEVEL	VOLTAGE (KV) DESIGN LEVEL	R-O-W LENGTH (MILES)	WIDTH (FEET)	SUPPORTING STRUCTURES	NUMBER OF CIRCUITS	SUBSTATIONS ON THE LINE
61	Woodsdale-Todhunter	Woodsdale	Todhunter	1195	1315	1195	1315	345	345	4.68	150	Steel Tower	2	
91	Miami Fort-West Milton	Miami Fort	Tower No. 173											
	Section 1			1195	1315	1195	1315	345	345	33.25	150	Steel Tower	2	
	Section 2			1195	1315	1195	1315	345	345	1.37	150	Steel Tower	1	
92	Miami Fort-Woodsdale	Miami Fort	Woodsdale											
	Section 1			1195	1315	1195	1315	345	345	33.25	150	Steel Tower	2	
	Section 2			1195	1315	1195	1315	345	345	4.82	150	Steel Tower	1	
98	Foster-Bath	Foster	Bath	1195	1315	1195	1315	345	345	40.28	150	Steel Tower	2	

(b) A separate listing of substations for each line included in form FE-T7 is shown on the following forms FE-T8, Summary of Existing Substations. The existing and proposed lines associated with each station are listed. The line numbers correspond to those shown on the schematic diagrams and geographic maps of section 4901:5-5-04 (C)(2).

DUKE ENERGY OHIO
4901:5-5-04(C)(1)(b)
FORM FE-T8: SUMMARY OF EXISTING SUBSTATIONS

SUBSTATION NAME	TYPE*	VOLTAGE(S) (KV)	LINE NAME	LINE NUMBER	EXISTING OR PROPOSED
AK Steel	T	138	Todhunter-AK Steel	5682	Existing
			Todhunter-AK Steel	5686	Existing
Ashland	D	138	Mitchell-Ashland-Oakley	1288	Existing
			Ashland-Mitchell	1269	Existing
			Red Bank-Ashland	7484	Existing
			Ashland-Whittier	1280	Proposed
Beckett	D	138	Port Union-Todhunter	3888	Existing
Beckjord	T	345 & 138	Oakley-Beckjord	886	Existing
			Beckjord-Silver Grove	1880	Existing
			Beckjord-Red Bank	1883	Existing
			Beckjord-Tabasco	1885	Existing
			Beckjord-Pierce	1887	Existing
			Beckjord-Pierce	1889	Existing
			Remington-Beckjord	9482	Existing
			Beckjord-Wilder	1881	Existing
			Wilder-Beckjord	5988	Existing
			Summerside-Beckjord	6984	Existing
			Beckjord-Pierce	4501	Existing
Bethany	D	138	Foster-Shaker Run	5485	Existing
Brighton	D	69	Mitchell-Brighton	1263	Existing
Brown	D	138	Brown-Stuart	5886	Existing
			Brown-Eastwood	5884	Existing
Carlisle	D	138	Shaker Run-Rockies Express	5381	Existing
Cedarville	D	138	Foster-Cedarville	5489	Existing
			Cedarville-Ford	2986	Existing
Central	D	69	Mitchell-Ashland	1269	Existing
Charles	D	138	Charles-West End	1385	Existing
			Charles-West End	1389	Existing
			Rochelle-Charles	8283	Existing
Cinti. M.S.D.	T	138	Mitchell-West End	1286	Existing
City of Hamilton	T	138	Port Union-City of Ham.	3889	Existing
			Fairfield-City of Hamilton	5781	Existing
Clermont	D	138	Summerside-Beckjord	6984	Existing
Clinton County	D	138	Warren-Clinton Co.	2381	Existing
Collinsville	D	138	Trenton-College Corner	3281	Existing
Cooper	D	138	Red Bank-Terminal	7481	Existing
Cornell	D	138	Red Bank-Terminal	7481	Existing
			Port Union-Foster	5483	Existing
Cumminsville	D	138	Mitchell-West End	1286	Existing
Deer Park	D	138	Red Bank-Terminal	7481	Existing
Dicks Creek	T	138	Todhunter-AK Steel	5686	Existing
Dimmick	D	138	Foster-Port Union	5483	Existing
Eastwood	D	138	Brown-Eastwood	5884	Existing
			Eastwood-Ford	8481	Existing
			Hillcrest-Eastwood	8887	Existing

* DISTRIBUTION(D) TRANSMISSION (T)

DUKE ENERGY OHIO
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FORM FE-T8: SUMMARY OF EXISTING SUBSTATIONS

SUBSTATION NAME	TYPE*	VOLTAGE(S) (KV)	LINE NAME	LINE NUMBER	EXISTING OR PROPOSED
Ebenezer	D	138	Terminal-Ebenezer	1783	Existing
			Ebenezer-Miami Fort	6885	Existing
Elmwood	D	138	Elmwood-Lateral	684	Existing
			Elmwood-Terminal	689	Existing
Evendale	D	138	Evendale-Port Union	4683	Existing
			Evendale-Terminal	4685	Existing
			Evendale-General Electric	GE4	Existing
Fairfield	D	138	Fairfield-Morgan	5783	Existing
			Port Union-Fairfield	3885	Existing
			Fairfield-City of Hamilton	5781	Existing
Feldman	D	138	Remington-Beckjord	9482	Existing
Finneytown	D	138	Willey-Terminal	9787	Existing
Ford	D	138	Foster-Ford	5489	Existing
			Brown-Ford	5884	Existing
Foster	T & D	345 & 138	Foster-Port Union	5483	Existing
			Foster-Warren	5484	Existing
			Foster-Shaker Run	5485	Existing
			Foster-Remington	5487	Existing
			Foster-Cedarville	5489	Existing
			Pierce-Foster	4502	Existing
			Stuart-Foster	4511	Existing
			Port Union-Foster	4508	Existing
			Foster-Todhunter	4515	Existing
			Foster-Sugarcreek	4524	Existing
Glenview	D	138	Terminal-Glenview	1782	Existing
			Miami Fort-Glenview	7284	Existing
Golf Manor	D	138	Red Bank-Terminal	7481	Existing
Hall	D	138	Port Union-Fairfield	3885	Existing
Henkel Corp.	D	138	Mitchell-Terminal	1284	Existing
Hillcrest	T & D	345 & 138	Stuart-Hillcrest	4511	Existing
			Foster-Hillcrest	34569	Existing
			Hillcrest-Eastwood	8887	Existing
Kemper	D	138	Evendale-Port Union	4683	Existing
Kleeman	D	138	Glenview-Miami Fort	7284	Existing
Lateral	D	138	Elmwood-Lateral	684	Existing
			Lateral-Red Bank	4187	Existing
Maineville	D	138	Foster-Warren	5484	Existing
Mapleknoll	D	138	Willey-Terminal	9787	Existing

* DISTRIBUTION(D) TRANSMISSION (T)

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FORM FE-T8: SUMMARY OF EXISTING SUBSTATIONS

SUBSTATION NAME	TYPE*	VOLTAGE(S) (KV)	LINE NAME	LINE NUMBER	EXISTING OR PROPOSED
Miami Fort	T	345 & 138	Miami Fort-Greendale	1681	Existing
			Miami Fort-Clifty Creek	1682	Existing
			Miami Fort-MFGT	1688	Existing
			Miami Fort-Morgan	1689	Existing
			Ebenezer-Miami Fort	6885	Existing
			Crescent-Miami Fort	7086	Existing
			Glenview-Miami Fort	7284	Existing
			Willey-Miami Fort	9784	Existing
			Miami Fort-Miami	4591	Existing
			Miami Fort-Woodsdale	4592	Existing
			Miami Fort-Tanners Creek	4504	Existing
			Miami Fort-Terminal	4514	Existing
Miami Fort GT	T	138	Miami Fort-MFGT	1688	Existing
			MFGT-Villa	2862	Existing
			MFGT-Ebenezer	2865	Existing
Midway	D	138	Terminal-Ebenezer	1783	Existing
			Miami Fort-Glenview	7284	Existing
Millikin	D	138	Port Union-Todhunter	3887	Existing
Mitchell	D	138	Mitchell-Brighton	1263	Existing
			Mitchell-Terminal	1284	Existing
			Mitchell-West End	1286	Existing
			Mitchell-Ashland-Oakley	1288	Existing
Montgomery	D	138	Foster-Remington	5487	Existing
			Foster-Port Union	5483	Existing
Morgan	D	138	Miami Fort-Morgan	1689	Existing
			Fairfield-Morgan	5783	Existing
Mt. Healthy	D	138	Willey-Terminal	9787	Existing
Mulhauser	D	138	Port Union-Willey	3886	Existing
Newtown	D	138	Beckjord-Red Bank	1883	Existing
Nickel	D	138	Warren-Todhunter	5680	Existing
Oakley	D	138	Oakley-Red Bank	885	Existing
			Oakley-Beckjord	886	Existing
			Mitchell-Ashland-Oakley	1288	Existing
OBannonville	D	138	Foster-Cedarville	5489	Existing
Park	D	138	Foster-Shaker Run	5485	Existing
Port Union	T & D	345 & 138	Port Union-Summerside	3881	Existing
			Foster-Port Union	5483	Existing
			Port Union-Fairfield	3885	Existing
			Port Union-Willey	3886	Existing
			Port Union-Todhunter	3887	Existing
			Port Union-Todhunter	3888	Existing
			Port Union-City of Hamilton	3889	Existing
			Evendale-Port Union	4683	Existing
			Zimmer-Port Union	4544	Existing
			Port Union-Foster	4508	Existing
			Terminal-Port Union	4513	Existing

* DISTRIBUTION(D) TRANSMISSION (T)

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FORM FE-T8: SUMMARY OF EXISTING SUBSTATIONS

SUBSTATION NAME	TYPE*	VOLTAGE(S) (KV)	LINE NAME	LINE NUMBER	EXISTING OR PROPOSED
Queensgate	D	138	Mitchell-West End	1286	Existing
Red Bank	T	345 & 138	Red Bank-Terminal	7481	Existing
			Lateral-Red Bank	4187	Existing
			Beckjord-Red Bank	1883	Existing
			Red Bank-Ashland	7484	Existing
			Oakley-Red Bank	885	Existing
			Red Bank-Tobasco	7489	Existing
			Red Bank-Terminal	4546	Existing
			Zimmer-Red Bank	4545	Existing
Remington	D	138	Remington-Beckjord	9482	Existing
			Foster-Remington	5484	Existing
Rochelle	D	138	Rochelle-Charles	8283	Existing
			Rochelle-Terminal	8286	Existing
			Rochelle-Whittier	8289	Proposed
Rockies Express	T	138	Shaker Run-Rockies Express	5381	Existing
			Todhunter-Rockies Express	5689	Existing
Seward	D	138	Port Union-Hamilton	3889	Existing
Shaker Run	D	138	Foster-Shaker Run	5485	Existing
			Shaker Run-Rockies Express	5381	Existing
Simpson	D	138	Foster-Port Union	5483	Existing
Socialville	D	138	Foster-Port Union	5483	Existing
SCP Eastwood	T	138	Hillcrest-Eastwood	8887	Existing
Summerside	D	138	Port Union-Summerside	3881	Existing
			Summerside-Beckjord	6984	Existing
Terminal	T & D	345 & 138	Elmwood-Terminal	689	Existing
			Mitchell-Terminal	1284	Existing
			Terminal-Allen	1762	Existing
			Terminal-Glenview	1782	Existing
			Terminal-Ebenezer	1783	Existing
			Evendale-Terminal	4685	Existing
			Red Bank-Terminal	7481	Existing
			Rochelle-Terminal	8286	Existing
			Willey-Terminal	9787	Existing
			Terminal-Port Union	4513	Existing
			Miami Fort-Terminal	4514	Existing
			East Bend-Terminal	4516	Existing
			Red Bank-Terminal	4546	Existing
Tobasco	D	138	Beckjord-Tobasco	1885	Existing
			Red Bank-Tobasco	7489	Existing

* DISTRIBUTION(D) TRANSMISSION (T)

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FORM FE-T8: SUMMARY OF EXISTING SUBSTATIONS

SUBSTATION NAME	TYPE*	VOLTAGE(S) (KV)	LINE NAME	LINE NUMBER	EXISTING OR PROPOSED
Todhunter	T & D	345 &138	Trenton-Todhunter	3284	Existing
			Port Union-Todhunter	3887	Existing
			Port Union-Todhunter	3888	Existing
			Todhunter-Monroe	5667	Existing
			Warren-Todhunter	5680	Existing
			Todhunter-Armco	5682	Existing
			Todhunter-Armco	5686	Existing
			Todhunter-Rockies Express	5689	Existing
			Foster-Todhunter	4515	Existing
			Woodsdale-Todhunter	4561	Existing
			Woodsdale-Todhunter	4562	Existing
Trenton	D	138	Trenton-College Corner	3281	Existing
			Trenton-Todhunter	3284	Existing
			Trenton-Middletown Oxygen	3263	Existing
Twenty Mile	D	138	Foster-Port Union	5483	Existing
Union	D	138	Shaker Run-Rockies Express	5381	Existing
Wards Corner	D	138	Remington-Beckjord	9482	Existing
Warren	T & D	138	Foster-Warren	5484	Existing
			Warren-Todhunter	5680	Existing
			Warren-Clinton County	2381	Existing
West End	D	138	Mitchell-West End	1286	Existing
			Charles-West End	1385	Existing
			Charles-West End	1389	Existing
			Crescent-West End	1587	Existing
			Wilder-West End	5985	Existing
Willey	D	138	Port Union-Willey	3886	Existing
			Willey-Miami Fort	9784	Existing
			Willey-Terminal	9787	Existing
Woodsdale	T	345	Woodsdale-Todhunter	4561	Existing
			Woodsdale-Todhunter	4562	Existing
			Miami Fort-Woodsdale	4592	Existing
Zimmer	T	345	Spurlock-Zimmer	4541	Existing
			Zimmer-Port Union	4544	Existing
			Zimmer-Red Bank	4545	Existing

* DISTRIBUTION(D) TRANSMISSION (T)

(2) Existing Transmission System Maps

(a) Schematic diagrams of the existing 345 kV and 138 kV transmission networks are considered by DEO to be critical energy infrastructure information. The diagrams are provided under seal.

(b) A map showing the actual, physical routing of the transmission lines, geographic landmarks, major metropolitan areas, and the location of substations and generating plants, interconnects with distribution, and interconnections with other electric transmission owners is considered by DEO to be critical energy infrastructure information. The map will be provided under seal.

(c) Rule Requirement - Two copies of the map described in paragraph (C)(2)(b) of this rule, for commission use, on a 1:250,000 scale. The electric transmission owners may jointly provide one set of maps to meet this requirement. Participation in the commission's joint mapping project will meet this requirement:

The joint mapping project coordinated by the OEUI has not been accomplished for a number of years to DEO's knowledge. DEO can provide a map at the requested scale to the commission upon request.

(D) <u>The Planned Transmission System</u>

(1) Specifications of planned transmission lines are provided on the following forms FE-T9, Specifications of Planned Electric Transmission Lines.

FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name and Number:	Trenton- College Corner DEO-A3281
2.	Point of Origin: Terminus:	Tap Feeder DEO-A3281 Butler REC Huston (proposed)
3.	Right-of-Way, Length: Average Width: Number of Circuits:	approximately 175 feet 50 feet 1 transmission line above 125 kV
4.	Voltage:	138 kV design and operate voltage
5.	Application for Certificate:	6/15/2010
6.	Construction:	construction commencement – 9/1/10 anticipated date of commercial operation – 10/1/10
7.	Capital Investment:	$80,000
8.	Substations:	Butler REC Huston Substation, 138 kV
9.	Supporting Structures:	wood poles
10.	Participation with other Utilities:	DEO – 100%
11.	Purpose of the planned transmission line	transmission supply to new Butler REC distribution substation.
12.	Consequences of Line Construction deferment or Termination:	inability to supply new Butler REC substation
13.	Miscellaneous:	

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FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name and Number:	Trenton- College Corner DEO-A3281
2.	Point of Origin: Terminus:	Tap Feeder 3281 Butler REC Huston (proposed)
3.	Right-of-Way, Length: Average Width: Number of Circuits:	approximately 175 feet 50 feet 1 transmission line above 125 kV
4.	Voltage:	138 kV design and operate voltage
5.	Application for Certificate:	6/15/2010
6.	Construction:	construction commencement – 9/1/10 anticipated date of commercial operation – 10/1/10
7.	Capital Investment:	$80,000
8.	Substations:	Butler REC Huston Substation, 138 kV
9.	Supporting Structures:	wood poles
10.	Participation with other Utilities:	DEO – 100%
11.	Purpose of the planned transmission line:	transmission supply to new Butler REC distribution substation.
12.	Consequences of Line Construction deferment or Termination;	inability to supply new Butler REC substation
13.	Miscellaneous:	

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FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name Line Number:	Ashland-Whittier DEO-A1280
2.	Point of Origin: Terminus:	Ashland Substation Whittier Substation
3.	Right of Way, Length: Average width: Number of circuits:	3200 feet 50 ft. 1
4.	Voltage:	138 kV
5.	Application for Certificate:	6/2011
6.	Construction to Commence: Commercial Operation:	commencement date: 9/2011 anticipated date: 12/2011
7.	Capital Investment:	$500,000
8.	Substations:	none
9.	Supporting Structures:	wood and/or steel poles
10.	Participation with other Utilities:	DEO – 100%
11.	Purpose of the Planned transmission line:	supply new substation to provide 12.47 kV distribution system capacity.
12.	Consequences of Line Construction deferment or Termination:	inability to supply 12.47 kV distribution load
13.	Miscellaneous:	area to be served is primarily north Cincinnati, OH

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FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name and Number:	Foster-Warren DEO-A5484
2.	Point of Origin: Terminus:	Tap Feeder 5484 Columbia (proposed)
3.	Right-of-Way, Length: Average Width: Number of Circuits:	approximately 175 feet 50 feet 1 transmission line above 125 kV
4.	Voltage:	138 kV design and operate voltage
5.	Application for Certificate:	6/1/2011
6.	Construction:	construction commencement – 9/1/11 anticipated date of commercial operation – 12/31/11
7.	Capital Investment:	$30,000
8.	Substations:	Columbia Substation, 138 kV
9.	Supporting Structures:	wood poles
10.	Participation with other Utilities:	DEO – 100%
11.	Purpose of the planned transmission line:	supply new substation to provide 12.47 kV distribution system capacity.
12.	Consequences of Line Construction deferment or Termination:	inability to supply 12.47 kV distribution load
13.	Miscellaneous:	area to be served is primarily west-central Warren County

DUKE ENERGY OHIO
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FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name and Number:	Foster-Warren DEO-A5484
2.	Point of Origin: Terminus:	Tap Feeder 5484 Columbia (proposed)
3.	Right-of-Way, Length: Average Width: Number of Circuits:	approximately 175 feet 50 feet 1 transmission line above 125 kV
4.	Voltage:	138 kV design and operate voltage
5.	Application for Certificate:	6/01/2011
6.	Construction:	construction commencement – 9/01/11 anticipated date of commercial operation – 12/31/11
7.	Capital Investment:	$30,000
8.	Substations:	Columbia Substation, 138 kV
9.	Supporting Structures:	wood poles
10.	Participation with other Utilities:	DEO – 100%
11.	Purpose of the planned transmission line:	supply new substation to provide 12.47 kV distribution system capacity.
12.	Consequences of Line Construction deferment or Termination:	inability to supply 12.47 kV distribution load
13.	Miscellaneous:	area to be served is primarily west-central Warren County

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FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name: Line Number:	Whittier-Rochelle DEO-A8289
2.	Point of Origin: Terminus:	Whittier Substation Rochelle Substation
3.	Right of Way, Length: Average width: Number of circuits:	7100 feet 10 ft. 1
4.	Voltage:	138 kV
5.	Application for Certificate:	06/2011
6.	Construction to Commence: Commercial Operation:	commencement date: 9/2011 anticipated date: 12/2012
7.	Capital Investment:	$8,100,000
8.	Substations:	none
9.	Supporting Structures:	underground
10.	Participation with other Utilities:	DEO – 100%
11.	Purpose of the Planned transmission line:	reinforce 138 kV transmission system
12.	Consequences of Line Construction deferment or Termination:	inability to supply all 138 kV transmission system load under normal and outage condition
13.	Miscellaneous:	area to be served is Cincinnati, OH

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FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name: Line Number:	Eastwood – Ford Batavia DEO-A8481
2.	Point of Origin: Terminus:	Tap Feeder 8481 Curliss Sub (Proposed)
3.	Right-of-Way, Length: Average width: Number of circuits:	0.1 miles 50 ft. 1
4.	Voltage:	138 kV
5.	Application for Certificate:	09/2015
6.	Construction to Commence: Commercial Operation:	01/2016 06/2016
8.	Capital Investment, Estimated Cost:	$58,117
8.	Substations:	Curliss Sub
9.	Supporting Structures:	Wood Poles
10.	Participation with other Utilities:	DEO – 100%
11.	Purpose of the Planned Transmission Line:	reinforce underlying 69 kV transmission system
12.	Consequences of Line Construction deferment or Termination:	inability to supply all 69 kV subtransmission system load under normal and outage conditions
13.	Miscellaneous:	area to be served is Central Clermont County

DUKE ENERGY OHIO
4901:5-5-04(D)(1)

FORM FE-T9: SPECIFICATIONS OF PLANNED ELECTRIC TRANSMISSION LINES

1.	Line Name: Line Number:	Eastwood-Ford Batavia DEO-A8481
2.	Point of Origin: Terminus:	Tap Feeder 8481 Curliss Sub (Proposed)
3.	Right-of-Way, Length: Average width: Number of circuits:	0.1 miles 50 ft. 1
4.	Voltage:	138 kV
5.	Application for Certificate:	09/2015
6.	Construction to Commence: Commercial Operation:	01/2016 06/2016
9.	Capital Investment, Estimated Cost:	 $58,117
8.	Substations:	Curliss Sub
9.	Supporting Structures:	Wood Poles
10.	Participation with other Utilities:	 CGE – 100%
11.	Purpose of the Planned Transmission Line:	reinforce underlying 69 kV transmission system
12.	Consequences of Line Construction deferment or termination:	inability to supply all 69 kV subtransmission system load under normal and outage conditions
13.	Miscellaneous:	area to be served is Central Clermont County

(2) A listing of all proposed substations is provided on the following forms FE-T10, Summary of Proposed Substations.

FORM FE-T10: SUMMARY OF PROPOSED SUBSTATIONS

Substation Name: Butler REC Huston

Voltage(s): 138 kV

Type of Substation: Transmission (T)

Timing: 2010

Line Association(s): DEO-A3281

Minimum Substation Site Acreage: site provided by Butler REC

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FORM FE-T10: SUMMARY OF PROPOSED SUBSTATIONS

Substation Name: Columbia

Voltage(s): 138 kV, 12.47 kV

Type of Substation: Distribution (D)

Timing: 2011

Line Association(s): DEO-A5484

Minimum Substation Site Acreage: 5 acres

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FORM FE-T10: SUMMARY OF PROPOSED SUBSTATIONS

Substation Name: Whittier

Voltage(s): 138 kV, 12.47 kV

Type of Substation: Distribution (D)

Timing: 2011

Line Association(s): DEO-A1280

Minimum Substation Site Acreage: 5 acres

DUKE ENERGY OHIO
4901:5-5-04(D)(2)
FORM FE-T10: SUMMARY OF PROPOSED SUBSTATIONS

Substation Name: Curliss Substation

Voltage(s): 138 kV, 69 kV

Type of Substation: Distribution (D)

Timing: 2016

Line Association(s): DEO-A8481

Minimum Substation Site Acreage: 5 acres

(3) Planned Transmission System Maps
   (a) Schematic maps and geographic maps depicting the existing and planned 345 kV and 138 kV transmission networks are considered by DEO to be critical energy infrastructure information. The maps and diagrams will be provided under seal.

   (b) Rule Requirement - Two copies of the above maps, for commission use, on a scale of 1:250,000. The electric transmission owners may jointly provide one set of overlays to meet this requirement. Participation in the commission's joint mapping project will meet this requirement:

   The joint mapping project coordinated by the OEUI has not been accomplished for a number of years to DEO's knowledge. DEO can provide a map at the requested scale to the commission upon request.

(E) Substantiation of the Planned Transmission System

(1) Graphic plots of the DEO 138 kV and 345 kV systems that show the MW and MVAR flows and the bus voltages have been prepared. They are considered by DEO to be critical energy infrastructure information. Plots of 138 kV system and 345 kV system for the 2010 summer base case and the most recently prepared 2015 summer base case plots will be provided separately to PUCO staff. The 2010 and 2015 summer base case power flow cases in PSS/E format are available upon request.

(2) Contingency cases - Contingency cases based on the peak load base cases are studied to determine system performance for generation and transmission system outages. The results of such studies are used as bases for the determination of the need for and timing of additions to the transmission system. DEO has prepared several power flow outage cases which can be considered representative of the types of outages studied. All cases are based on the 2010 Summer Peak Load Power Flow Base Case. The outage cases, discussion and power flow transcription diagrams are considered by DEO to be critical energy infrastructure information which will be provided under seal.

(3) Analysis of proposed solutions to problems identified in paragraph (E)(2) of this rule: As discussed, a number of contingency cases, predicated on the various base cases, have been studied. These contingency cases include loss of transformer and/or loss of transmission circuit, as well as unscheduled variation of generation dispatch. These contingency cases seek to model

system performance under various conditions that are common to electric system operation. The general criteria applied to these studies are that the loss of either a major transformer or transmission circuit should not cause loading on any of the remaining transformers or circuits to exceed their emergency thermal ratings. In addition, double-contingency outages, which include at least one 345 kV system component, should likewise not cause loading on any remaining components to exceed the emergency thermal ratings. Probability of occurrence, availability of mitigating procedures, and other factors are considered when these reliability analyses are performed and evaluated. No problems are expected as a result of the contingencies identified in paragraph (E) (2) of this rule. DEO expects all electric components to operate within their limits based on DEO's planning criteria.

(4) Adequacy of the electric transmission owner's transmission system to withstand natural disasters and overload conditions: The contingency cases and reliability analyses described above indicate the performance of the transmission system subsequent to outages, which may be caused by natural disasters. As discussed above, the transmission system is designed to withstand certain outages without causing loading on the remaining system components to exceed emergency thermal load ratings. More severe outages may cause system components to overload. Such overloads, if not corrected by switching or other actions, may cause loss of life of the overloaded system components. Some outages may be of such a severity that all of the load could not be served. The transmission system could also be segmented to such a degree that all of the load could not be served.

(5) Analysis of the electric transmission owner's transmission system to permit power interchange with neighboring systems: The Duke Energy Ohio transmission system is interconnected to American Power (AEP), Dayton Power and Light (DAY), Ohio Valley Electric Company (OVEC), and Eastern Kentucky Power Cooperative (EKPC). The ability to accommodate any particular interchange, whether short term or long term is highly dependent on the actual transfer and the conditions under which it would occur. Duke Energy Ohio is a member of the Midwest Independent Transmission System Operator as such the allocation of Available Flowgate Capacity (AFC) is the sole responsibility if the Midwest ISO.

(6) Transmission Import and Export Transfer Capability: Duke Energy Ohio is a member of the Midwest Independent Transmission System Operator as such the allocation of AFC is the sole responsibility of the Midwest ISO.

(7) A description of any studies regarding transmission system improvement, including, but not limited to, any studies of the potential for reducing line losses, thermal loading, and low voltage, and for improving access to alternative energy resources: No transmission system studies specifically addressing the above items have been performed. Line losses are considered

in the evaluation of alternative projects. Thermal loading and low voltage issues are considered and addressed as a part of the transmission system evaluation and planning process. Accommodation of alternative energy sources requesting connection to the DEO transmission system are handled by the Midwest ISO interconnection procedures.

(8) Switching diagrams of the DEO 138 kV and 345 kV systems are considered by DEO to be critical energy infrastructure information which will be provided under seal.

(F) Regional and bulk power requirements

Information relating to RFC and bulk power requirements is provided to the PUCO by RFC on behalf of Duke Energy Ohio and several Ohio electrical utilities.

(G) Critical energy infrastructure information

As discussed previously, Duke Energy Ohio considers all or portions of the information sought under the rules listed below to be critical energy infrastructure information. This information has been assembled separately and will be provided to the commission under seal.

4901:5-5-04 (C)(2)(a)	4901:5-5-04 (C)(2)(b)	4901:5-5-04 (C)(2)(c)
4901:5-5-04 (D)(3)(a)	4901:5-5-04 (D)(3)(b)	4901:5-5-04 (E)(1)
4901:5-5-04 (E)(2)	4901:5-5-04 (E)(8)	

SECTION III – ELECTRIC DISTRIBUTION FORECAST

On the following pages, the loads for Duke Energy Ohio are provided. Please note that FE-D forms represent the full distribution forecast regardless of who supplies the energy, whereas the FE-T forms represent the load supplied by the regulated utility. Therefore, the first two years of the forecast reflect energy and peak reduced for current switching levels. The remaining years of the forecast reflect the assumption that all load returns to the regulated utility at the end of the ESP.

1. Service Area Energy Forecasts

The following forms contain the energy forecast for Duke Energy Ohio's service area.

Before implementation of any new EE programs or incremental EE impacts, Residential use for the ten-year period of the forecast is expected to decrease an average of 0.1 percent per year; Commercial use increases, 0.7 percent per year; and Industrial use increases, 1.0 percent per year. The summation of the forecast across each sector and including losses results in a growth rate forecast of 0.4 percent for Total Energy.

The Total energy growth rate after EE impacts is (-0.5) percent.

2. System Seasonal Peak Load Forecast

The following forms also contain the forecast of summer and winter peaks before implementation of EE programs for the Duke Energy Ohio service area. The historical difference between native and internal load before EE reflects the impact of the interruptible rate tariff and other demand response programs.

The table shows the Summer and succeeding Winter Peaks, the Summer Peaks being the predominant ones historically. Projected growth in the internal summer peak demand is 0.2 percent. Projected growth in the internal winter peak demand is 0.3 percent.

Peak load forecasts after implementation of EE programs are shown for native and internal loads after EE. The projected growth in the internal summer peak is (-0.3) percent.

3. Controllable Loads

The native peak load forecast reflects the MW impacts from the PowerShare® demand response program and controllable loads from the Power Manager program. The amount of load controlled depends upon the level of operation of the particular customers participating in the programs. The difference between the internal and native peak loads consists of the impact from these loads. See Section H in Duke Energy Ohio's Resource Plan for a complete discussion of controllable and other demand response programs.

PUCO Form FE-D1 : EDU Service Area Energy Delivery Forecast										
(Megawatt Hours/Year) (a)										
Ohio Portion Only Before DSM (d)										
		1	2	3	4	5	6	7	8
	Year	Residential	Commercial	Industrial	Transportation (b)	Other (c)	Total End Use Delivery	Line Losses and Company Use	Total Energy
							1+2+3+4+5		6+7
-5	2005	7,694,394	6,289,304	6,105,336	-	1,668,252	21,757,286	1,415,465	23,172,751
-4	2006	7,228,367	6,212,235	5,882,619	-	1,661,986	20,985,207	1,417,453	22,402,660
-3	2007	7,769,714	6,575,744	5,835,890	-	1,719,514	21,900,861	1,609,916	23,510,777
-2	2008	7,404,197	6,486,706	5,442,127	-	1,713,026	21,046,057	1,275,432	22,321,489
-1	2009	7,050,776	6,281,633	4,720,539	-	1,611,326	19,664,274	740,849	20,405,122
0	2010	7,321,588	6,337,314	4,834,083	-	1,581,033	20,074,018	1,389,225	21,463,243
1	2011	7,334,724	6,406,048	4,893,604	-	1,580,564	20,214,940	1,399,508	21,614,448
2	2012	7,436,249	6,567,649	5,006,672	-	1,611,821	20,622,391	1,427,983	22,050,374
3	2013	7,315,304	6,671,091	5,061,557	-	1,595,725	20,643,676	1,429,968	22,073,644
4	2014	7,323,283	6,699,411	5,090,421	-	1,580,760	20,693,874	1,433,726	22,127,600
5	2015	7,267,026	6,718,157	5,105,068	-	1,574,135	20,664,386	1,432,306	22,096,692
6	2016	7,237,179	6,739,466	5,134,056	-	1,560,542	20,671,243	1,433,557	22,104,800
7	2017	7,209,397	6,758,407	5,176,431	-	1,543,023	20,687,258	1,435,286	22,122,545
8	2018	7,211,433	6,780,941	5,221,919	-	1,531,941	20,746,234	1,440,082	22,186,316
9	2019	7,209,382	6,791,420	5,267,371	-	1,518,375	20,786,547	1,443,471	22,230,018
10	2020	7,228,470	6,811,498	5,313,439	-	1,505,791	20,859,198	1,449,154	22,308,352

(a) To be filled out by all EDUs. The category breakdown should refer to the Ohio portion of the EDU's total service area.

(b) Transportation includes railroads & railways.

(c) Other includes street & highway lighting, public authorities, interdepartmental sales, and wholesale

(d) Historical numbers include the impact of DSM programs in place at the time.

PUCO Form FE-D1 : EDU Service Area Energy Delivery Forecast

(Megawatt Hours/Year) (a)

After DSM (d)

		1	2	3	4	5	6	7	8
	Year	Residential	Commercial	Industrial	Transportation (b)	Other (c)	Total End Use Delivery	Line Losses and Company Use	Total Energy
							1+2+3+4+5		6+7
-5	2005	7,418,999	4,766,448	4,942,176	-	1,420,375	18,547,998	1,210,526	19,758,525
-4	2006	7,068,216	5,776,484	5,794,652	-	1,551,925	20,191,276	1,370,231	21,561,508
-3	2007	7,623,125	6,178,343	5,756,911	-	1,592,553	21,150,932	1,554,761	22,705,693
-2	2008	7,280,878	6,092,035	5,364,071	-	1,593,139	20,330,124	1,231,134	21,561,257
-1	2009	6,721,835	5,656,344	3,371,411	-	1,438,194	17,187,784	602,245	17,790,029
0	2010	5,902,939	3,965,660	1,469,634	-	582,272	11,920,505	827,092	12,747,597
1	2011	5,832,478	3,485,565	1,406,830	-	535,821	11,260,694	782,725	12,043,419
2	2012	7,205,484	6,429,451	5,006,577	-	1,585,031	20,226,543	1,400,846	21,627,389
3	2013	6,974,671	6,479,562	5,061,421	-	1,558,993	20,074,646	1,390,946	21,465,592
4	2014	6,866,710	6,443,655	5,090,237	-	1,531,713	19,932,314	1,381,493	21,313,807
5	2015	6,699,999	6,394,756	5,104,837	-	1,511,692	19,711,284	1,366,911	21,078,195
6	2016	6,555,407	6,353,267	5,133,780	-	1,486,233	19,528,687	1,355,124	20,883,811
7	2017	6,408,923	6,314,019	5,176,108	-	1,458,220	19,357,270	1,343,951	20,701,221
8	2018	6,299,204	6,274,132	5,221,554	-	1,435,830	19,230,720	1,335,956	20,566,676
9	2019	6,191,351	6,218,555	5,266,951	-	1,410,343	19,087,199	1,326,670	20,413,869
10	2020	6,099,925	6,177,604	5,312,967	-	1,386,944	18,977,440	1,319,760	20,297,200

(a) To be filled out by all EDUs. The category breakdown should refer to the Ohio portion of the EDU's total service area.

(b) Transportation includes railroads & railways.

(c) Other includes street & highway lighting, public authorities, interdepartmental sales, and wholesale

(d) Historical numbers include the impact of DSM programs in place at the time.

PUCO Form FE-D3 : EDU System Seasonal Peak Load Demand Forecast (c)			
(Megawatts)(a)			
Internal Before DSM (c) (d)			
	Year	Summer	Winter (b)
-5	2005	4,228	3,224
-4	2006	4,366	3,551
-3	2007	4,459	3,505
-2	2008	4,074	3,526
-1	2009	3,675	2,271
0	2010	2,854	2,083
1	2011	2,756	3,522
2	2012	4,495	3,535
3	2013	4,505	3,548
4	2014	4,506	3,550
5	2015	4,478	3,545
6	2016	4,482	3,549
7	2017	4,484	3,551
8	2018	4,494	3,558
9	2019	4,496	3,563
10	2020	4,505	3,570

(a) To be filled out by all EDUs. Data should refer to the Ohio portion of the EDU's total service area.

(b) Winter load reference is to peak loads which follow the summer peak load.

(c) Historical company peaks not necessarily coincident with the system peak.

(d) Figures reflect the impact of historical demand side programs.

PUCO Form FE-D3 : EDU System Seasonal Peak Load Demand Forecast (c)			
(Megawatts)(a)			
Internal After DSM (c) (d)			
	Year	Summer	Winter (b)
-5	2005	4,228	3,224
-4	2006	4,366	3,551
-3	2007	4,459	3,505
-2	2008	4,074	3,526
-1	2009	3,675	2,271
0	2010	2,833	2,053
1	2011	2,713	3,463
2	2012	4,431	3,445
3	2013	4,408	3,416
4	2014	4,379	3,388
5	2015	4,324	3,353
6	2016	4,301	3,328
7	2017	4,275	3,276
8	2018	4,260	3,255
9	2019	4,236	3,232
10	2020	4,219	3,215

(a) To be filled out by all EDUs. Data should refer to the Ohio portion of the EDU's total service area.

(b) Winter load reference is to peak loads which follow the summer peak load.

(c) Historical company peaks not necessarily coincident with the system peak.

(d) Figures reflect the impact of historical demand side programs.

PUCO Form FE-D5: EDU's Total Monthly Energy Forecast (MWh)					
Before DSM					
Year 0					
January					1,268,365
February					1,050,828
March					1,031,495
April					915,356
May					954,119
June					1,121,232
July					1,250,640
August					1,267,126
September					1,007,950
October					924,999
November					909,550
December					1,123,082
Year 1					
January					1,173,952
February					976,900
March					954,719
April					844,512
May					886,254
June					1,056,531
July					1,198,277
August					1,229,441
September					987,676
October					912,192
November					896,057
December					1,102,828

PUCO Form FE-D5: EDU's Total Monthly Energy Forecast (MWh)					
After DSM					
Year 0					
January					1,267,421
February					1,049,127
March					1,028,680
April					911,842
May					949,345
June					1,115,522
July					1,243,673
August					1,259,295
September					999,664
October					916,121
November					899,807
December					1,112,026
Year 1					
January					1,164,788
February					967,902
March					944,025
April					833,745
May					873,657
June					1,043,030
July					1,183,114
August					1,213,487
September					971,738
October					895,945
November					878,997
December					1,084,230

PUCO Form FE-D6: EDU's Monthly Internal Peak Load Forecast (Megawatts)					
Before DSM					
Year 0					
January					2,210
February					2,078
March					1,969
April					1,778
May					2,181
June					2,661
July					2,854
August					2,824
September					2,463
October					1,920
November					1,751
December					2,037
Year 1					
January					2,083
February					1,949
March					1,841
April					1,645
May					2,036
June					2,524
July					2,756
August					2,756
September					2,428
October					1,901
November					1,727
December					2,002

PUCO Form FE-D6: EDU's Monthly Internal Peak Load Forecast (Megawatts)					
After DSM					
Year 0					
January					2,207
February					2,072
March					1,960
April					1,770
May					2,167
June					2,646
July					2,833
August					2,801
September					2,437
October					1,899
November					1,729
December					2,013
Year 1					
January					2,053
February					1,916
March					1,805
April					1,620
May					1,997
June					2,481
July					2,713
August					2,707
September					2,377
October					1,863
November					1,689
December					1,962

4. Load Factor

The numbers below represent the annual percentage load factor for the Duke Energy Ohio System before any new or incremental EE. It shows the relationship between Total Energy and the annual internal Summer Peak, before EE.

YEAR	LOAD FACTOR
2005	54.56%
2006	58.52%
2007	55.36%
2008	62.16%
2009	63.80%
2010	55.66%
2011	55.67%
2012	56.00%
2013	55.93%
2014	56.05%
2015	56.33%
2016	56.29%
2017	56.32%
2018	56.36%
2019	56.44%
2020	56.53%
2021	56.65%
2022	56.75%
2023	56.83%
2024	56.96%
2025	57.10%
2026	57.21%
2027	57.31%
2028	57.36%
2029	57.46%
2030	57.55%

5. Substantiation of the Planned Distribution System

(1) Load flow or other system analysis by voltage class of the EDU's distribution system performance in Ohio, that identifies and considers each of the following:

(1) Any thermal overloading of distribution circuits and equipment;

(2) Any voltage variations on distribution circuits that do not comply with the current version of American National Standard Institute (ANSI) C84.1, electric power systems and equipment and equipment voltage ratings or standard as later amended.

The Duke Energy Ohio distribution system includes systems that operate at nominal voltages of 4.16 kV, 12.47 kV, 13.2 kV, 34.5 kV and 69 kV. Planning for the 4.16 kV, 12.47 kV and 34.5 kV systems utilizes a combination of peak load power flow analysis and projections of the expected future peak loads on the various system components. The load projections are based on historical loads, general load growth trends within defined load areas, and known proposed loads. The projected future loads are then compared to the assigned capacity of the components to determine if and when any components are expected to experience peak loading in excess of their assigned capacities. System reinforcement projects are then identified and planned for completion prior to the projected time that the components would be overloaded without relief. This process is repeated on an annual basis, adjusting project schedules as required due to differences between actual load growth and projected load growth and any other pertinent factors.

The distribution capacity planning process addresses voltage variation in planning for the Duke Energy 4.16 kV, 12.47 kV, 13.2 kV and 34.5 kV systems by incorporating design parameters intended to maintain the voltage at all the customer service points within ANSI C84.1 standards. These design parameters include the following:

1. application of automatic voltage regulation at the feeder source within substations
2. application of capacitor banks both within substations and distributed on the distribution feeders
3. utilization of adequately sized conductor and distribution transformers

Any voltage concerns identified by customer notification or system monitoring are addressed by insuring that the above design parameters are adhered to.

(2) Analysis and consideration of proposed solutions to problems identified in paragraph (C)(1) of this rule.

As of the date of preparation of this report, the following major projects are planned to insure that adequate thermal capacity will exist on the Duke Energy 4.16 kV, 12.47 kV, 13.2 kV and 34.5 kV distribution systems:

2010

Hensley Substation – Replace existing 10.5 MVA transformer with a 22.4 MVA, 69-12.47 kV transformer to increase loadability of a circuit serving the Hamilton area.

Park Substation – Install a 22.4 MVA, 138-12.47 kV transformer and associated equipment at an existing Duke Energy Ohio substation to serve projected area loading and relieve existing circuits in the area.

2011

Seward Substation – Install an additional 22.4 MVA, 138-12.47 kV transformer and associated equipment at an existing Duke Energy Ohio Substation to serve expected increased demand in the West Chester area.

Columbia Substation – Install a 22.4 MVA, 138-12.47 kV transformer and associated equipment at a new Duke Energy Ohio substation to serve projected area loading and relieve existing circuits in the area.

Mack Substation – Install an additional 22.4 MVA, 69-12.47 kV transformer and associated equipment at an existing Duke Energy Ohio substation to serve projected area loading and relieve existing circuits in the area.

Whittier Substation – Install two 33.6 MVA, 138-12.47 kV transformers and associated equipment at a new Duke Energy Ohio substation to serve projected area loading and relieve existing circuits in the area.

Green Secondary Network Improvements – Add transformers and conductors to relieve projected overloading to parts of downtown Cincinnati service area.

2012

Canal Substation – Install a 22.4 MVA, 69-12.47 kV transformer and associated equipment in a new Duke Energy substation to serve expected increased demand in the Hamilton area.

Brown Substation – Install a 22.4 MVA, 138-12.47 kV transformer and associated equipment at an existing Duke Energy Ohio substation to serve projected winter heating demand in southeastern Brown County.

Distribution capacity projects are typically not planned beyond a three to four year time horizon, due to the variability in area load growth patterns and the ability to react fairly quickly in the implementation of capacity projects. Smaller-scale projects to upgrade or establish distribution feeder routes to serve new load and/or allow loads to be served by existing substation capacity are typically planned and implemented in shorter time-frames as required by actual load development.

(3) Adequacy of the electric utility distribution system to withstand natural disasters and overload conditions.

The Duke Energy Ohio distribution system is designed to withstand certain wind loading, ice loading, and other structural issues by recognized national standards. Natural disasters that exceed these conditions may result in damage to the distribution system and the inability to serve all customers. Duke Energy Ohio has an Emergency Plan that calls for the mobilization of personnel and resources as required by the severity of a given incident, including mutual assistance from other utilities.

The goal of the Duke Energy Ohio planning process is to insure that components are not loaded beyond their assigned ratings under normal system conditions to meet expected load. However, under outage or other abnormal conditions, Duke Energy Ohio recognizes that it may be necessary to load components beyond the ratings assigned for normal use. Certain components, such as transformers, regulators, and cables, have identifiable overload capabilities that are either allowable for intermittent use during the life of the component or can be mitigated after the overload by maintenance activities. Duke Energy Ohio will utilize such capacity when necessary and feasible to carry load if the alternative is to not serve the load. Certain other system components, such as overhead lines, do not have significant overload capacity due the necessity of maintaining adequate electrical clearance.

(4) Analysis and consideration of any studies regarding distribution system improvement, including, but not limited to, any studies of the potential for reducing line losses, thermal loading and low voltage or any other problems, and for improving access to alternative resources.

The analytical process intended to alleviate thermal loading and low voltage conditions on the Duke Energy Ohio distribution system is described in response to paragraph 4901:5-5-04(C)(1)(a) and (b). No general improvement studies or studies related solely to the reduction of line losses are performed. No studies specifically related to improving access to alternative energy sources have been performed.

(5) A switching diagram of circuits less than one hundred twenty-five kV that are not radial.

All Duke Energy Ohio 4.16 kV, 12.47 kV, 13.2 kV and 34.5 kV circuits are operated in a radial mode. A number of 69 kV circuits operate in non-radial mode. The switching diagram of the DEO 69 kV system is considered by DEO to be critical energy infrastructure information. This diagram will be provided separately to PUCO staff with the 138 kV and 345 kV switching diagrams requested under 4901:5-5-04 (E)(8). The non-radial operated circuits are indicated on this diagram.

SECTION IV - DUKE ENERGY OHIO 2010 RESOURCE PLAN

A. EXECUTIVE SUMMARY

Duke Energy Ohio has both a legal obligation and a corporate commitment to meet the energy needs of its customers in a way that is affordable, reliable and clean. Extensive planning and analysis helps the Company achieve this commitment to customers. Duke Energy Ohio utilizes a resource planning process to identify the best options by which to serve customers in the future.

The Company's planning approach considers a diverse range of resources including renewable, nuclear, coal, natural gas, demand-side management (DSM) and energy efficiency resources. In addition, this Ohio Resource Plan (the Plan) incorporates both quantitative analysis and qualitative considerations. For example, quantitative analysis provides insights on future risks and uncertainties associated with energy efficiency impacts and projected carbon dioxide (CO_2) allowance prices. Qualitative perspectives, such as the importance of fuel diversity, the Company's environmental profile and the stage of technology deployment are also important factors to consider as long-term decisions are made regarding new resources. The end result is the Plan. It serves as an important tool to guide the Company in making business decisions to meet customers' near-term and long-term energy needs.

For the first time since electric restructuring in Ohio in 1999, and to comply with Public Utilities Commission of Ohio (PUCO) Rule 4901:5-5-06, Ohio Administrative Code (O.A.C.), Duke Energy Ohio is filing this Plan.

1. Uncertainties in the Planning Process

Today the integrated resource planning environment is more dynamic than ever. There is uncertainty on a number of fronts, including customer load forecasts, the implementation of Senate Bill 221 (SB 221) and federal carbon regulation.

The significant number of customers that have switched to other competitive generation suppliers makes it difficult to forecast future customer load. Duke Energy Ohio will have a new standard service offer (SSO) effective January 1, 2012. Consistent with SB 221, this SSO will be competitive. Accordingly, for the purposes of this Plan, it was assumed that all distribution customers beginning January 1, 2012, will be served by Duke Energy Ohio to align with the commencement of a new SSO.

In addition, there is uncertainty as to whether utilities can meet the aggressive energy efficiency and renewable/advanced energy resource requirements established in SB 221, largely due to uncertainty around the extent to which customers will embrace energy saving opportunities. In combination, the standards will require nearly half of the total energy needs to be met with energy efficiency, renewable or advanced energy resources by 2025, an aspiration that is far beyond today's standards or experience.

While the Commission rules related to resource planning only require information covering a 10-year period, Duke Energy Ohio concluded that it was prudent to look beyond the required 10-year period to begin planning for how the Company will meet the SB 221 requirements by 2025, particularly in light of the long lead-time associated with qualifying advanced energy resources such as nuclear and clean coal generation.

The future levels required for energy efficiency, renewable, and advanced energy resources are significantly greater than current levels. These requirements present numerous challenges on the path toward successful achievement. With regard to energy efficiency, both customer adoption rates and costs to achieve new energy efficiency measures are uncertain. Duke Energy Ohio's Plan considers two levels of energy efficiency accomplishments – a higher level to reflect the achievement of the SB 221 mandates as well as a lower level of accomplishment based on a market potential study prepared by a third party for the benefit of Duke Energy Ohio. A study on market potential provides estimates of the level of energy efficiency that is realistically achievable by customers in the market place.

With regard to renewable resources, the requirement for at least 50% in-state resources will require significant in-state renewable resource additions to meet these increasing requirements going forward. Due to the relatively recent passage of this legislation, near-term compliance is expected to be met primarily with in-state and out-of-state Renewable Energy Certificate (REC) purchases. Duke Energy Ohio's longer-term renewable strategy assumes the renewable resource requirements will be met with a balanced approach of approximately 50% REC purchases, with the remaining requirements satisfied by new renewable wind and solar resources contributing both energy and RECs. These new renewable resources could either be owned by Duke Energy Ohio or contracted through third parties provided the Company has reasonable assurance of cost recovery for these resources.

Another important uncertainty is the future of federal carbon regulation. Duke Energy Ohio believes that legislation or rules set by the Environmental Protection Agency will be adopted to mandate reductions in carbon emissions from power plants. SB 221 anticipates this mandate by requiring that utilities meet 25% of customer energy needs through Alternative Energy Resources (AER) by 2025. The Company believes that advanced nuclear generation and clean coal technology are critical to meeting the standard and de-carbonizing its generation fleet. In developing this Plan, Duke Energy Ohio assumes that carbon legislation will be in place and carbon emissions will be priced beginning in 2015 via a cap and trade mechanism similar to SO_2 and NO_x emission trading systems that have been very successful since in the 1990s. To reflect the specific uncertainty on carbon legislation requirements, this Plan assumes separate high and low carbon cost ranges.

SB 221 allows utilities to recover the costs of new, dedicated generation through a non-bypassable charge which provides a valuable mechanism to support the investments in today's uncertain capital markets. However, potential barriers remain, particularly for new base load generation due to the large capital requirements and long lead-times associated with this type of generation. Broad legislative changes will be needed prior to commitments to nuclear generation. For example, a better designed process and schedule for collecting financing costs during construction through a Construction Work in Progress (CWIP) rider or similar mechanism is critical. This "pay as you go" approach to recovering financing costs benefits customers and the Company. For customers, it reduces the total cost of the project because financing costs do not compound over time. For the Company, it helps ensure the collection of costs while the project is still under construction. Other legislative or regulatory changes may be needed as well.

2. Planning Process Results

Given the number of uncertainties described above, the Company believes the most prudent approach is to create a plan that is robust under various possible future scenarios. At the same time, the Company must maintain its flexibility to adjust to evolving economic, environmental and operating circumstances.

The planning process identified four scenarios shown below that could ensure reliable service in an optimized manner to meet the AER requirements. As described above, the analysis included low and high carbon pricing and low and high compliance with the energy efficiency requirements of SB 221. All scenarios include compliance with SB 221 AER requirements.

OPTIMIZED PLAN RESULTS

Low Carbon	Low Carbon	High Carbon	High Carbon
Economic Potential EE	SB 221 EE	Economic Potential EE	SB 221 EE
CT & 400 MW Nuclear	**CT & 400 MW Nuclear**	**CT & 800 MW Nuclear**	**CT & 800 MW Nuclear**

*CT represents peaking resources such as Combustion Turbine (CT) capacity and MISO/PJM annual capacity purchases

The most robust planning scenarios support additional natural gas peaking capacity in the short term, preserve the option for new nuclear generation in the long-term as well as provide for new solar and wind energy to round out the portfolio.

The resource planning process indicates that the optimal resource plan for Ohio consists of purchasing or building peaking capacity over the next ten years. Peaking capacity resource options include the Midwest Independent System Operator (MISO)/ PJM Interconnection (PJM) capacity markets and short-term purchase power agreements in the near term. Over a longer term, peaking resources might also include building or purchasing power from peaking assets (such as combustion turbines) at the appropriate time with consideration of construction lead times, customer switching and prevailing market prices. Renewable resource requirements will be met through a balanced approach of REC-only purchases and securing energy/RECs through new, Company-owned renewable resources or contracts with third party renewable facilities. Duke Energy Ohio will regularly assess its future near-term resource needs and make decisions on MISO/PJM capacity purchases, short-term purchased power agreements (PPAs) or building/acquiring assets in keeping with the strategic direction selected in the Plan.

The resource planning process also identified the potential value of new nuclear resource options over the longer term to meet the specific SB 221 advanced energy resources required by 2025 in a carbon constrained environment. Costs associated with CO_2 emissions related to carbon legislation or regulations, along with differing levels of energy efficiency achievement, support new advanced nuclear capacity options ranging from 400 MWs to as much as 800 MWs. Specific detailed plans for a long-range nuclear option will be highly dependent upon future national and state energy policy, including carbon legislation, and continued progress in advanced nuclear design, as well as construction costs. Additionally, commitments to capital intensive projects such as new nuclear resources will be highly dependent upon legislative and regulatory actions supporting cost recovery.

To explore potential nuclear options in Ohio, the Company announced on June 18, 2009 the formation of an alliance between Duke Energy, AREVA, USEC Inc., UniStar Nuclear Energy and the Southern Ohio Diversification Initiative to pursue the Southern Ohio Clean Energy Park Alliance (SOCEPA) in Piketon, Ohio. Although Duke Energy Ohio has entered into the Alliance, the Company has not made a decision to build a nuclear plant at the Piketon site, nor at any other site in the Midwest region. Duke Energy has also not selected a specific technology. Duke Energy Ohio is moving forward in 2010 to conduct a number of site suitability studies to assess whether the Piketon site is a viable site for a nuclear power plant. The studies will evaluate some key technical and environmental factors that are critical to the successful siting of a nuclear power plant.

The Company's 2010 Plan, shown in Table 4-1 below, reflects the addition of annual short-term capacity purchases over the next ten years, as well as the addition of renewable resources. The inclusion of annual short-term capacity purchases as the near-term strategy for meeting customer needs reflects the flexibility of the Plan to respond to customer switching and the need to maintain a "placeholder" for securing a large amount of advanced energy resources by 2025 to comply with SB 221. However, as noted above, customer needs in this timeframe could be met in other ways such as building or purchasing peaking assets. Also, as discussed above, beyond the immediate planning horizon, new nuclear generation continues to be a potential option to serve customers.

Table 4-1- Duke Energy Ohio Resource Plan			
2010-2019			
Year	Annual Unit Additions & Capacity Purchases	Cumulative Unit	
2010	Monthly Capacity Purchases	N/A	
2011	Monthly Capacity Purchases 1 MW Solar	1 MW Solar	
2012**	1050 MW Peaking/Intermediate Resources 3 MW Solar	4 MW Solar	
2013	1050 MW Peaking/Intermediate Resources 3 MW Solar	7 MW Solar	
2014	1000 MW Peaking/Intermediate Resources 3 MW Solar 50 MW Wind	10 MW Solar MW Wind	50
2015	1250 MW Peaking/Intermediate Resources 3 MW Solar 50 MW Wind	13 MW Solar MW Wind	100
2016	1200 MW Peaking/Intermediate Resources 3 MW Solar 50 MW Wind	16 MW Solar 150 MW Wind	
2017	1150 MW Peaking/Intermediate Resources 3 MW Solar 50 MW Wind	19 MW Solar 200 MW Wind	
2018	1150 MW Peaking/Intermediate Resources 3 MW Solar 50 MW Wind	22 MW Solar MW Wind	250
2019	1100 MW Peaking/Intermediate Resources 3 MW Solar 50 MW Wind	25 MW Solar MW Wind	300

B. INTRODUCTION

Resource planning is about charting a course for the future in an uncertain world. Arguably, the planning environment is more dynamic than ever. These uncertainties exist even in non-restructured environments; the uncertainties are exacerbated in a restructured environment. A few of the key uncertainties include, but are not limited to:

- Customer Switching: What will Duke Energy Ohio's generation obligation be from year to year? How can Duke Energy Ohio ensure it has adequate resources to meet customer needs?
- Load Forecasts: How elastic is the demand for electricity? Will environmental regulations such as federal carbon regulation result in higher costs of electricity and, thus, lower electricity usage? Can a highly successful energy efficiency program flatten or even reduce demand growth? At what pace will recovery from the current economic conditions affect the demand for electricity?
- Federal Carbon Regulation: What type of federal carbon legislation will be passed? Will it be industry-specific or economy-wide? Will it be a "cap-and-trade" system? How will allowances be allocated? To what degree will carbon offsets be allowed?
- Renewable Energy: Can Duke Energy Ohio secure sufficient renewable energy resources to meet its obligations under SB 221? Will a federal standard be set? Will it have a "safety valve" price?
- DSM and Energy Efficiency: Can DSM and energy efficiency deliver the anticipated capacity and energy savings reliably? Are customers ready to embrace energy efficiency? Will an investment in DSM and energy efficiency be treated equally with investments in a generating plant?

- Gas Prices: What is the future of natural gas prices and supply? Will enhanced natural gas recovery techniques open up new reserves and lower prices in the long term in the United States?
- Coal Prices: What is the future of coal prices and supply? What impact will increased regulatory pressure on the coal mining industry have on availability and price?
- Nuclear Generation: Is the region ready for investment in new nuclear generation? Can the federal and state impediments to construction be addressed? What is the timeframe needed to license and build nuclear plants? What level of certainty can be established with respect to the capital costs of a new nuclear power plant?

Duke Energy Ohio's resource planning process seeks to identify what actions the Company must take to ensure a safe, reliable, reasonably-priced supply of electricity for its customers regardless of how these uncertainties unfold. The planning process considers a wide range of assumptions and uncertainties and develops a resource plan and an action plan that preserve the options necessary to meet customers' needs. The process and resulting conclusions are discussed in this document.

The objective of the 2010 Duke Energy Ohio Resource Plan is to outline a strategy to furnish electric energy services over a long term planning horizon in a reliable, efficient, and economic manner, that includes the specific renewable, energy efficiency, and advanced energy resource requirements as stipulated by SB 221. The integrated modeling approach of the Plan includes forecasted electric loads, existing generating resources, potential supply-side, renewable and energy efficiency resources, and consideration of existing and potential environmental regulations such as transitioning to a lower carbon environment.

C. PLANNING ASSUMPTIONS

Preparing a resource plan requires the utility to develop planning assumptions for a variety of inputs including a forecast of future energy usage, current generation resource portfolio operating assumption, future environmental regulation impacts and the expectations to meet future legislative requirements such as the comprehensive SB 221 legislation. The major planning assumptions used for the development of this Plan include:

- The customer load forecast is based on all Duke Energy Ohio distribution customers load forecast beginning 2012. Prior to 2012, the Plan only addresses non-switched customers that have elected to continue with Duke Energy Ohio as their generation provider.
- Installed net summer generation capability owned by Duke Energy Ohio is 3,891 Megawatts (MW) consisting of 3,511 MW of coal-fired steam capacity, 136 MW of natural gas summer peaking capacity and 244 MW of oil-fired peaking capacity.
- [redacted]
- SB 221 energy efficiency and peak load reduction goals will be met over the next ten years.
- SB 221 renewable energy requirements for solar and non-solar will be met through a balanced combination of RECs and new wind, solar, and biomass resources.
- Duke Energy Ohio will operate within PJM consistent with its recent announcement to transfer the Duke Energy Ohio transmission assets from the MISO to the PJM regional transmission organization effective January 1, 2012.
- Carbon legislation will be enacted with projected carbon emission allowance costs beginning in 2015 to accomplish expected national carbon reduction goals.

PUCO Rule 4901:5-5-06 requires utilities to file a ten year resource plan. While the PUCO rules related to resource planning only require information covering a 10-year period, Duke Energy Ohio concluded that it was prudent to look beyond the required 10-year period to begin planning for how the Company will meet the SB 221 requirements by 2025, particularly in light of the long lead-time associated with qualifying advanced energy resources such as nuclear and clean coal generation.

Load forecast

Duke Energy Ohio's long term forecast was focused on developing the distribution forecast without regard to customer switching. For the purposes of resource planning, two relevant forecasts are assumed: a non-switched customer forecast through 2011 (prior to the implementation of a new SSO), and a distribution customer load forecast beginning in 2012, when Duke Energy Ohio will have a new SSO effective January 1, 2012. Consistent with SB 221, this SSO will be competitive. Accordingly, for the purposes of this Plan, it was assumed that all distribution customers beginning January 1, 2012, will be served by Duke Energy Ohio to align with the commencement of a new standard service offer.

Reliability Criteria

To ensure an adequate and reliable source of electricity for customers, Duke Energy Ohio must plan to have sufficient resources to meet the need while taking into consideration that load can be higher than forecasted or generating units may be unavailable due to scheduled or unscheduled outages. As a result, a target planning reserve margin is established as a reliability criteria in planning. The Plan is based on meeting a target planning reserve margin of 15.3%. The 15.3% reliability criteria is the PJM revised installed reserve margin for the delivery year 2013/2014 from the most recent Reliability Pricing Model (RPM) capacity auction which cleared on May 14, 2010.[1] With the planned transition of transferring the transmission assets from MISO to PJM, using long term planning criteria with PJM reserve margin criteria best reflected the strategic intent of a long term resource plan.

D. RESOURCE PLANNING PROCESS

The development of the Plan is a multi-step process involving these key functional planning performing the following activities:

- Preparation of the electric load forecast.
- Identification of electric energy efficiency, renewable, and advanced energy resource options to the levels required by SB 221.
- Identification and economic screening for the cost-effectiveness of supply-side resource options.
- Integration of the energy efficiency, renewable, and supply-side options with the electric load forecast to develop potential resource portfolios to meet the desired reserve margin criteria.
- Performance of detailed modeling of potential resource portfolios to determine the resource portfolio that exhibits the lowest cost (lowest net present value of costs) to customers over a wide range of alternative futures.
- Evaluation of the ability of the selected resource portfolio to minimize price and reliability risks to customers.

[1] PJM utilizes the 15.3% installed reserve margin in order to determine capacity requirements for the reliable operation of the entire regional transmission system. PJM also utilizes a peak load allocation as a correlation of a zonal peak to the PJM RTO peak. The closer a zone's annual peak comes to the PJM RTO peak, the higher the allocation factor for the RTO peak capacity cost allocation. Future considerations of correlations of the Duke Energy Ohio peak load to the PJM RTO peak load will be evaluated as PJM transitions are completed.

1. Existing Assets

The total installed net summer generation capability owned by Duke Energy Ohio is 3,891 Megawatts (MW). This capacity consists of 3,511 MW of coal-fired steam capacity, 136 MW of natural gas-fired peaking capacity, and 244 MW of oil-fired peaking capacity. The steam capacity located at six stations is comprised of fifteen coal-fired steam units. The peaking capacity consists of eight oil-fired Combustion Turbine (CT) units located at two stations, and four natural gas-fired CTs located at one station. Ten of the fifteen steam units are jointly owned. Duke Energy Ohio has a 37.5% ownership interest in Beckjord 6. Duke Energy Ohio has a 40% ownership interest in Conesville 4. Duke Energy Ohio has a 33% ownership interest in Killen 2. Duke Energy Ohio has a 64% ownership interest in Miami Fort 7 and 8. Duke Energy Ohio has a 39% ownership interest in Stuart 1 through 4. Additionally, Duke Energy Ohio has a 46.5% ownership interest in Zimmer 1.

The largest unit on the Duke Energy Ohio system is Zimmer Unit 1, rated at 1300 MW total, or 605 MW Duke Ohio ownership share. The smallest coal-fired units on the system are Beckjord Units 1 and 2, each rated at 94 MW. The peaking units on the Duke Energy Ohio system range in size from 14 MW combustion turbine units at Miami Fort and Dicks Creek, to the 82 MW Dicks Creek Unit 1.

Forms R-3 and R-4 are shown below.

PUCO Form FE-R3:
Summary of Existing Electric Generation Facilities

STATION NAME & LOCATION	SYSTEM*	FOOT NOTES	UNIT	TYPE OF UNIT*	INSTALLATION DATE MONTH & YEAR	TENTATIVE RETIREMENT YEAR	MAXIMUM GENERATING CAPABILITY (net kW) SUMMER	WINTER	ENVIRONMENTAL PROTECTION MEASURES*	MAXIMUM GENERATING CAPABILITY (net kW) Spring/Fall
W C Beckjord	DEO		1	CF-S	6-1952	Unknown	94,000	94,000	LNB, EP & FGC	94,000
New Richmond			2	CF-S	10-1953	Unknown	94,000	94,000	LNB, EP & FGC	94,000
Ohio			3	CF-S	11-1954	Unknown	128,000	128,000	EP, FGC, LNB & OFA	128,000
			4	CF-S	7-1958	Unknown	150,000	150,000	EP, FGC, LNB & OFA	150,000
			5	CF-S	12-1962	Unknown	238,000	238,000	EP, FGC, LNB & OFA	238,000
		A	6	CF-S	7-1969	Unknown	155,000	158,000	EP, FGC, LNB & OFA	158,000
			1-GT	OF-GT	4-1972	Unknown	47,000	61,000	None	53,000
			2-GT	OF-GT	4-1972	Unknown	47,000	61,000	None	53,000
			3-GT	OF-GT	6-1972	Unknown	47,000	61,000	None	53,000
			4-GT	OF-GT	6-1972	Unknown	47,000	61,000	None	53,000
						Station Total:	1,047,000	1,106,000		1,074,000
Conesville	DEO	B	4	CF-S	6-1973	Unknown	312,000	312,000	EP, CT, LNB & OFA	312,000
Conesville, OH										
Dicks Creek	DEO		1	GF-GT	9-1965	Unknown	92,000	110,000	SC	101,000
Middletown,			3	GF-GT	6-1969	Unknown	14,000	20,000	SC	15,000
Ohio			4	GF-GT	10-1969	Unknown	15,000	21,000	None	18,000
			5	GF-GT	10-1969	Unknown	15,000	21,000	None	18,000
						Station Total:	136,000	172,000		152,000
Killen	DEO	C	2	CF-S	6-1982	Unknown	198,000	198,000	EP, LNB, CT, SO2 Scrubber SCR	198,000
Wrightsville, OH										
Miami Fort	DEO		3-GT	OF-GT	7-1971	Unknown	14,000	20,000	None	15,000
North Bend,			4-GT	OF-GT	8-1971	Unknown	14,000	20,000	None	15,000
Ohio			5-GT	OF-GT	9-1971	Unknown	14,000	20,000	None	15,000
			6-GT	OF-GT	10-1971	Unknown	14,000	20,000	None	15,000
		D	7	CF-S	5-1975	Unknown	320,000	320,000	EP, LNB, CT SO2 Scrubber, SCR & SBS	320,000
		D	8	CF-S	2-1978	Unknown	320,000	320,000	EP, LNB, CT SO2 Scrubber, SCR & SBS	320,000
						Station Total:	696,000	720,000		700,000
J M Stuart	DEO	E	1	CF-S	5-1971	Unknown	225,000	225,000	EP, LNB, SO2 Scrubber & SCR	225,000
Aberdeen,										
Ohio		E	2	CF-S	10-1970	Unknown	225,000	225,000	EP, LNB, SO2 Scrubber & SCR	225,000
		E	3	CF-S	5-1972	Unknown	225,000	225,000	EP, LNB, SO2 Scrubber & SCR	225,000
		E	4	CF-S	6-1974	Unknown	225,000	225,000	EP, LNB, CT SO2 Scrubber & SCR	225,000
						Station Total:	900,000	900,000		900,000
W H Zimmer	DEO	F	1	CF-S	3-1991	Unknown	605,000	605,000	EP, LNB, CT, SO2 Scrubber, SCR & SBS	605,000
Moscow, OH										
						SYSTEM TOTAL:	3,894,000	4,013,000		3,941,000

*LEGEND

CF = Coal Fired
OF - Oil Fired
GF = Natural Gas Fired

S = Steam
GT = Simple-Cycle Combustion Turbine

EP = Electrostatic Precipitator
SC = Smokeless Combustor
CT - Cooling Tower(s)
SCR - Selective Catalytic Reduction, Nox
WI - Water Injection, NOx
SI - Steam Injection, NOx
LNB - Low NOx Burners
OFA - Overfire Air
SNCR - Selective Non-Catalytic Reduction
FGC - Flue Gas Conditioning
SBS - Sodium Bisulfite/Soda Ash Injection System

DEO - Duke Energy Ohio

FOOT NOTES

(A) Unit 6 is commonly owned by Duke Energy Ohio (37.5% - Operator). The Dayton Power and Light Company (50%) and Columbus Southern Power Company (12.5%).
(B) Unit 4 is commonly owned by Duke Energy Ohio (40%); The Dayton Power and Light Company (16.5%) and Columbus Southern Power Company (43.5% - Operator).
(C) Unit 2 is commonly owned by Duke Energy Ohio (33%) and The Dayton Power and Light Company (67% - Operator).
(D) Units 7 and 8 are commonly owned by Duke Energy Ohio (64% - Operator) and by The Dayton Power and Light Company (36%).
(E) This station is commonly owned by Duke Energy Ohio (39%); The Dayton Power and Light Company (35% - Operator) and Columbus Southern Power Company (26%)
(F) Unit 1 is commonly owned by Duke Energy Ohio (46.5% - Operator); The Dayton Power and Light Company (28.1%) and Columbus Southern Power Company (25.4%).

PUCO Form FE-R4:

Actual Generating Capability Dedicated to meet Ohio Peak Load (as of 12/31/20xx)

Unit Designation

Year/Season	Unit Name	Description	Seasonal Total (MW)	
2010/Summer	Beckjord 1	Coal - Steam	94	
2010/Summer	Beckjord 2	Coal - Steam	94	
2010/Summer	Beckjord 3	Coal - Steam	128	
2010/Summer	Beckjord 4	Coal - Steam	150	
2010/Summer	Beckjord 5	Coal - Steam	238	
2010/Summer	Beckjord 6	Coal - Steam	155	**Foot Note A**
2010/Summer	Conesville 4	Coal - Steam	312	**Foot Note B**
2010/Summer	Killen 2	Coal - Steam	198	**Foot Note C**
2010/Summer	Miami Fort 7	Coal - Steam	320	**Foot Note D**
2010/Summer	Miami Fort 8	Coal - Steam	320	**Foot Note D**
2010/Summer	Stuart 1	Coal - Steam	225	**Foot Note E**
2010/Summer	Stuart 2	Coal - Steam	225	**Foot Note E**
2010/Summer	Stuart 3	Coal - Steam	225	**Foot Note E**
2010/Summer	Stuart 4	Coal - Steam	225	**Foot Note E**
2010/Summer	Zimmer 1	Coal - Steam	605	**Foot Note F**
2010/Summer	Beckjord GT 1	Combustion Turbine/Oil-fired	47	
2010/Summer	Beckjord GT 2	Combustion Turbine/Oil-fired	47	
2010/Summer	Beckjord GT 3	Combustion Turbine/Oil-fired	47	
2010/Summer	Beckjord GT 4	Combustion Turbine/Oil-fired	47	
2010/Summer	Dicks Creek 1	Combustion Turbine/Nat Gas-fired	92	
2010/Summer	Dicks Creek 3	Combustion Turbine/Nat Gas-fired	14	
2010/Summer	Dicks Creek 4	Combustion Turbine/Nat Gas-fired	15	
2010/Summer	Dicks Creek 5	Combustion Turbine/Nat Gas-fired	15	
2010/Summer	Miami Fort 3	Combustion Turbine/Oil-fired	14	
2010/Summer	Miami Fort 4	Combustion Turbine/Oil-fired	14	
2010/Summer	Miami Fort 5	Combustion Turbine/Oil-fired	14	
2010/Summer	Miami Fort 6	Combustion Turbine/Oil-fired	14	

FOOT NOTES:

(A) Unit 6 is commonly owned by Duke Energy Ohio (37.5% - Operator); The Dayton Power and Light Company (50%) and Columbus Southern Power Company (12.5%).

(B) Unit 4 is commonly owned by Duke Energy Ohio (40%); The Dayton Power and Light Company (16.5%) and Columbus Southern Power Company (43.5% - Operator).

(C) Unit 2 is commonly owned by Duke Energy Ohio (33%) and The Dayton Power and Light Company (67% - Operator).

(D) Units 7 and 8 are commonly owned by Duke Energy Ohio (64% - Operator) and by The Dayton Power and Light Company (36%).

(E) This station is commonly owned by Duke Energy Ohio (39%); The Dayton Power and Light Company (35% - Operator) and Columbus Southern Power Company (26%).

(F) Unit 1 is commonly owned by Duke Energy Ohio (46.5% - Operator); The Dayton Power and Light Company (28.1%) and Columbus Southern Power Company (25.4%).

E. AVAILABILITY AND MAINTENANCE

The unplanned outage rates of the units used for planning purposes were derived from the historical Generating Availability Data System (GADS) data on these units. Planned outages were based on maintenance requirement projections as discussed below. This Plan assumes that Duke Energy Ohio's existing generating units generally will continue to operate at their present availability and efficiency (heat rate) levels. A comprehensive maintenance program for generating assets is important in providing reliable, low-cost service. The following outlines the general guidelines governing the preparation of a planned outage schedule for existing units operated by Duke Energy Ohio. It is anticipated that future units will be governed by similar guidelines.

Scheduling Guidelines for Duke Energy Ohio Units:

(1) Major maintenance (turbine overhauls) on base load units 500 MWs and larger is performed at eight to twelve year intervals. Major boiler maintenance repairs and replacements are performed in conjunction with major turbine overhauls. General boiler inspections, turbine valve inspections, and balance of plant repairs are performed on two year intervals.

(2) Major maintenance on intermediate-duty units between approximately 90 MWs and 500 MWs is performed at eight to fifteen year intervals. General boiler inspections, turbine valve inspections, and balance of plant repairs are performed on two year intervals.

(3) Maintenance on simple cycle peaking units 14 MWs to approximately 90 MWs are time predictive and preventive maintenance based and primarily based on routine bore scope inspections. These inspections provide the opportunity to inspect the unit

without disassembling the unit. The bore scope inspections provide sufficient data required for the scheduling of major maintenance.

In addition to the regularly scheduled planned outages for all unit groups "availability outages" are performed. Availability outages are unplanned, opportunistic, proactive, short duration maintenance outages aimed at addressing peak period reliability. At appropriate times, when market conditions allow, units may be scheduled out of service for generally short periods of time to perform maintenance activities. This enhancement in maintenance philosophy reflects the focus on having generation available during peak periods.

1. Fuel Supply

The Duke Energy Ohio system utilizes a diversity of fuels to generate energy and purchased power to serve its customers. These fuels include coal, natural gas and oil. Furthermore, the market encompasses an even wider diversity of technology types and fuels to which the Company has access via purchased power.

Although the majority of the energy generated by Duke Energy Ohio is currently derived from coal, the actual amount of coal consumed is determined by the forward market prices for power, fuel (coal) and emission allowances. Specifically, Duke Energy Ohio uses an approach to commercial risk management, including fuel procurement, best described as active portfolio management. The benefits of active management are that Duke Energy Ohio makes rational economic decisions based upon the available market prices of fuel, power, and emission allowances and reduce market risk on behalf of consumers.

Electricity generated from burning coal accounts for approximately 90% of Duke Energy Ohio's total electric generation capacity. The cost of coal is the most significant element in the cost of electric production. The goal of Duke Energy Ohio with respect to coal procurement is threefold. First, Duke Energy Ohio seeks to provide a reliable supply of coal in quantities sufficient to meet generating requirements as part of the entire portfolio. Second, Duke Energy Ohio seeks to work closely with the stations, operations and engineering groups to evaluate coal compatibility with environmental regulations and alternate suppliers. Finally, Duke Energy Ohio seeks to procure coal at the lowest reasonable cost. Duke Energy Ohio accomplishes these goals by purchasing coal via long-term and spot market purchases.

To ensure fuel supply quality and reliability, Duke Energy Ohio purchases coal from three regions (Illinois Basin, Northern Appalachia & Central Appalachia) and ensures that potential counterparties are qualified based on coal quality and creditworthiness. Duke Energy Ohio buys and burns two types of coal (e.g. low sulfur and high sulfur) and contracts for coal for various terms. Low sulfur coal is easily acquired via the liquid Over-The-Counter (OTC) or broker market where its price is easily discernable and its characteristics are standardized. High sulfur coal on the other hand, which is purchased for units that have installed pollution control equipment, is unique given its characteristics (e.g. BTU content, chlorine, ash fusion temperature, iron) and requires a greater level of negotiations with a smaller group of suppliers than low sulfur coal. Duke Energy Ohio maintains stockpiles of coal at each station to guard against short-term supply disruptions, with a goal of having a 20 to 30 day supply (at full burn rate) on site.

Duke Energy Ohio purchases natural gas on a day-ahead basis for the gas-fired peaking units when the units have been or are expected to be cleared in the day-ahead market. The natural gas purchased for the peaking units is a delivered product (e.g. CGE Citygate) and does not require the purchase of pipeline transportation capacity. Duke Energy Ohio buys fuel oil on a contractual basis from Marathon Ashland Petroleum Company. The pricing is based on the lower of the posted Oil Price Information Service (OPSI) price or the Marathon Ashland price. Duke Energy Ohio monitors oil pricing and makes purchases based on a combination of inventory levels and expected prices.

2. Fuel Prices

The fuel price assumptions utilized to develop the Plan represent a combination of observed market prices and the long term fundamental outlook developed for Duke Energy Corporation (Duke Energy) by Wood McKenzie. Duke Energy utilizes its internal subject matter experts to review and validate the assumptions and study results provided by Wood McKenzie. The Company typically uses current market prices where there is an observable market to represent the near term (first 3 to 5 years) and then transitions to the long term fundamentals for the balance of the study period. The prices used for natural gas and fuel oil are also based on a combination of the New York Mercantile Exchange (NYMEX) forward curve and the Wood McKenzie long term fundamental outlook.

3. Retirement Assessment

The retirement of generating units depends on a number of factors including environmental regulations, unit operating performance, and the economics of continued operation. To recognize these factors and specifically how they may impact older, less efficient coal generating plants, this Plan assumes that [redacted]. These retirement assumptions are used for planning purposes to recognize potential new environmental regulations rather than specific unit firm commitments and will continue to be evaluated to reassess generation equipment operations along with current and future compliance with all state and federal environmental regulations.

As of March 1, 2010, Beckjord units 1, 2 and 3 were suspended from operation and placed in mothballed status for up to a period of three years. On November 18, 2009, Duke Energy Ohio submitted MISO Attachment Y (Notification of Potential Generation Resource/SCU Change of Status) of the MISO tariff requesting a suspension of operation for the three units effective March 1, 2010. On February 19, 2010, MISO notified Duke Energy Ohio that the units were approved to be suspended from operation after reviewing the power system reliability impacts under the MISO tariff. If the units remain mothballed after the three year period, new interconnection and deliverability studies will be required for the units return. Currently, Beckjord units 1 and 2 are being considered for repowering to burn 100 % biomass by converting the boilers to fluidized bed technology. Beckjord units 4 through 6 may not have appropriate environmental controls in place to meet potential environmental compliance requirements including Utility Boiler Maximum Achievable Control Technology (MACT) which creates emission limits for hazardous air pollutants (HAPs) such as mercury and the National Ambient Air Quality Standards (NAAQS) for Ozone. Future investment decisions to add the necessary control equipment to meet future environmental regulations and continue to operate these units past these assumed retirement dates would be made based on the overall economics of continued plant operations. Prior to any retirement of Beckjord units 4 through 6, Duke Energy Ohio will need to submit to the appropriate transmission operator a request and receive approval to suspend the operations of these units, similar to what Duke Energy Ohio did for Beckjord units 1through 3.

F. IMPACT OF ENVIRONMENTAL REGULATIONS

1. Air Quality

Duke Energy Ohio is required to comply with numerous state and federal air emission regulations. In addition to current programs and regulatory requirements several new regulations are in various stages of implementation and development that will impact operations for Duke Energy Ohio in the coming years. Some of the major rules include:

2. Clean Air Interstate Rule (CAIR)

The US Environmental Protection Agency (EPA) finalized its Clean Air Interstate Rule (CAIR) in May 2005. The CAIR limits total annual and summertime NO_x emissions and annual SO_2 emissions from electric generating facilities across the Eastern U.S. through a two-phased cap-and-trade program. Phase 1 began in 2009 for NO_x and in 2010 for SO_2. Duke Energy Ohio expects to spend approximately $65 million by 2014 to comply with Phase I related requirements. In December 2008, the D.C. Circuit issued a decision remanding the CAIR to the EPA, allowing CAIR to remain in effect as an interim solution until EPA develops new regulations. EPA expects to issue a proposed replacement CAIR rule in June 2010 and expects to finalize it in 2011. Compliance with the replacement CAIR rule is expected by 2015. At this time, the impacts of a replacement CAIR rule are not known.

3. Utility Boiler MACT

In May 2005, the EPA issued the Clean Air Mercury Rule (CAMR). The rule established mercury emission-rate limits for new coal-fired steam generating units. It also established a nationwide mercury cap-and-trade program covering existing and new coal-fired power units.

In February 2008 the D.C. Circuit Court of Appeals issued its opinion, vacating the CAMR. EPA has begun the process of developing a rule to replace the CAMR. The replacement rule, the Utility Boiler MACT, will create emission limits for hazardous air pollutants (HAPs), including mercury. Duke Energy is presently performing work as required for EPA's Information Collection Request (ICR). The ICR requires collection of mercury and HAPs emissions data from numerous Duke Energy facilities that will be used by EPA in developing the MACT rule. EPA expects to issue both a proposed and finalized MACT rule prior to the end of 2011. The MACT rule is expected to require compliance with new emission limits by 2015. As with CAIR, the impact on Duke Energy Ohio plants by the MACT rule is not known at this time.

4. National Ambient Air Quality Standards

a. 8 Hour Ozone Standard

In March 2008, EPA revised the 8 Hour Ozone Standard by lowering it from 84 to 75 parts per billion (ppb). In September of 2009, EPA announced a decision to reconsider the 75 ppb standard in response to a court challenge from environmental groups and their own belief that a lower standard was justified. A proposed rule was issued by the EPA in January 2010 in which EPA proposed to replace the existing standard with a new standard between 60 and 70 ppb. EPA must finalize the rule in August 2010. State Implementation Plans (SIP) will be due by the end of 2013, with attainment dates for most areas possibly in the 2016 to 2017 timeframe. Until the states develop implementation plans, only an estimate can be developed of the potential impact to Duke Energy Ohio's generation. With a standard in the 60 to 70 ppb range, the Cincinnati area may be at risk to require the installation of the best performing NO_X controls such as Selective Catalytic Reduction (SCR) on units that do not currently operate them.

b. SO_2 Standard

EPA in November 2009 proposed a rule to replace the current 24-hour and annual primary SO_2 NAAQS with a 1-hour SO_2 standard. A new 1-hour standard of 75 ppb was finalized on June 3, 2010. States with non-attainment areas will have until the winter of 2014 to submit their SIPs. Initial attainment dates are expected to be the summer of 2017. EPA will base its nonattainment designations on air quality data for years 2009 to 2011.

In addition, EPA is proposing to require States to relocate some existing monitors and to add new monitors by January 2013. While these monitors will not be used by EPA to make the initial nonattainment designations, they will play a role in identifying possible future nonattainment areas. Based on EPA's schedule, 2016 would be the earliest year possible for having 3 years of available data from the new and relocated monitors to make nonattainment designations. Once again the potential impacts of a new SO2 NAAQS standard and future designations are unknown.

5. Global Climate Change

At the federal level, the U. S. House of Representatives in June 2009 passed H.R. 2454, the American Clean Energy and Security Act of 2009. The bill establishes a cap-and-trade program for carbon emissions that includes the electric utility sector. Under H.R. 2454 the cap-and-trade program would start in 2012. More recently a newer bill has been introduced by Senators Kerry and Lieberman that will be debated in 2010. Passage of federal climate change legislation in the Senate in 2010 remains highly uncertain.

In December 2009, the EPA finalized an Endangerment Finding for greenhouse gases under the Clean Air Act, determining that:

- Greenhouse gases in the atmosphere threaten both the public health and public welfare of current and future generations; and
- Greenhouse gas emissions from motor vehicles contribute to that threat.

The Endangerment Finding does not impose any regulatory requirements on industry, but was a necessary prerequisite for EPA to be able to finalize its proposed carbon emission standard for new motor vehicles which was finalized on March 31, 2010. Under EPA's current regulatory theory, a final New Motor Vehicle Rule will trigger Prevention of Significant Deterioration (PSD) and Title V permitting requirements and Best Available Control Technology (BACT) emission control requirements for carbon emissions for new and modified major carbon emission sources. The EPA administrator has stated that PSD and Title V permitting requirements will not take effect until January 2011 for large stationary sources, including electric generating facilities. The EPA also recently finalized what is commonly referred to as the Tailoring Rule. This rule is intended to provide relief from EPA's federal carbon regulations for certain types of stationary sources, but not electric generating facilities. There is at the present time considerable uncertainty about the specific requirements that would apply to any stationary source that might potentially be subject to PSD carbon emission permitting and BACT emission reduction requirements. The EPA has indicated that it will be providing guidance on what BACT is for carbon emissions but has not yet done so.

6. Water Quality

a. CWA 316(b) Cooling Water Intake Structures

Federal regulations in Section 316(b) of the Clean Water Act may necessitate cooling water intake modifications for existing facilities to minimize impingement and entrainment of aquatic organisms. All Duke Energy Ohio facilities are potential affected sources under that rule. EPA has announced plans to issue a proposed rule by October 2010 with a final rule not likely until early 2012. With an assumed timeframe for compliance of 3 years, implementation of selected technology is possible in early 2015.

Most likely, regardless of water body type, performance standards to achieve 80% reduction of impinged fish and 80% reduction of fish entrainment will be required. Provided that performance requirements can be met, retrofits may involve intake screen modifications only. However, failure to meet performance standards could require use of a closed-cycle cooling system.

b. Steam Electric Effluent Guidelines

In September 2009, EPA announced plans to revise the steam electric effluent guidelines. In order to assist with development of the revised regulation, EPA issued an Information Collection Request (ICR) to gather information and data from nearly all steam-electric generating facilities. The ICR is expected to be received in June 2010 and is required to be completed within 90 days. The regulation is to be technology-based, in that limits are based on the capability of technology. The primary focus of the revised regulation is on coal-fired generation, thus the major areas likely to be impacted are Flue Gas Desulfurization (FGD) wastewater treatment systems and ash handling systems. The EPA may set limits that dictate certain FGD wastewater treatment technologies for the industry and may require dry ash handling systems for both fly and bottom ash be installed. Following review of the ICR data, EPA plans to issue a draft rule in mid-2012 and a final rule in mid-2014. After the final rulemaking, effluent guideline requirements will be included in a station's National Pollutant Discharge Elimination System (NPDES) permit renewals. Thus requirements to comply with

NPDES permit conditions may begin as early as 2017 for some facilities. The length of time allowed to comply will be determined through the permit renewal process.

7. Waste Issues

a. Coal Combustion Byproducts

Following TVA's Kinston ash dike failure in December 2008, EPA began an effort to assess the integrity of ash dikes nationwide and to begin developing a rule to manage coal combustion byproducts (CCBs). CCBs include fly ash, bottom ash and FGD byproducts (gypsum). Since the 2008 dike failure, numerous ash dike inspections have been completed by EPA and an enormous amount of input has been received by EPA as it developed proposed regulations. On May 4, 2010, EPA announced its proposed rule regarding CCBs. The EPA rule refers to these as coal ash residuals (CCRs). The proposed rule offers two options: 1) a hazardous waste classification under RCRA Subtitle C; and 2) a non-hazardous waste classification under RCRA Subtitle D, along with dam safety and alternative rules. Both options would require strict new requirements regarding the handling, disposal and potential re-use ability of CCRs. The proposal will likely result in more conversions to dry handling of ash, more landfills, closure of existing ash ponds and the addition of new wastewater treatment systems. Final regulations are expected in mid-2011. EPA's regulatory classification of CCRs as hazardous or non-hazardous will be critical in developing plans for handling CCRs in the future. The impact to Duke Energy Ohio of this regulation as proposed is still being assessed. Compliance with new regulations is projected to begin around 2017.

G. POOLING AND BULK POWER AGREEMENTS

At present, Duke Energy Ohio does not participate in any formal type of power pooling arrangement. However, Duke Energy Ohio currently participates in the MISO energy markets and is planning to transition to the PJM market in 2012.

Duke Energy Ohio is directly interconnected with eight other balancing authorities (American Electric Power, Louisville Gas and Electric Energy, Ameren, Hoosier Energy, Indianapolis Power and Light, Northern Indiana Public Service Company, and Vectren) as well as Duke Energy Indiana. MISO operates its Ancillary Services Market for the balancing authorities within the MISO which are consolidated into a single MISO balancing authority.

Duke Energy Ohio has several full requirements contracts to serve wholesale customers.

Table 4.2

Duke Energy Ohio Full Requirements Contracts

Wholesale Customer	***Max Quantity of Energy/Capacity***	***Contract Expiration Date***
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

H. ENERGY EFFICIENCY/DSM PROGRAMS

The Company considered energy efficiency and DSM program assumptions for the resource planning process. Two cases were developed: 1) a "high" case based on the level of energy efficiency required by SB 221, and 2) an "economic potential" case that tracks SB 221 until a level of 1% additional energy efficiency per year is reached. (See Tables 4.3 and 4.4, respectively.) The growth of energy efficiency in that case remains at 1% until the economic potential of 13% cumulative savings is reached. The economic potential was based on a market potential study prepared by a third party for the benefit of Duke Energy Ohio. A study on market potential provides estimates of the level of energy efficiency that is realistically achievable by customers in the market place. This is less than the cost-effective potential which represents the level of energy efficiency that can be achieved assuming all customers participate. As discussed below, the Company evaluated both levels of energy efficiency in the resource planning process.

Existing Energy Efficiency and Demand Response Programs

As part of its application at the (Public Utilities Commission of Ohio) PUCO to establish an Electric Security Plan (Case No. 08-920-EL-SSO), Duke Energy filed a revised portfolio of energy efficiency programs. This new portfolio expanded existing programs and was coupled with a new regulatory mechanism called save-a-watt. Save-a-watt is designed to incentivize the Company to achieve significantly more kWh and kW impacts than its previous energy efficiency filing, as it will be compensated based upon the avoided costs associated with the verified efficiency impacts. Within the ESP, the Company included a three year plan for supply and pricing of electric generation service. The plan requested recovery of costs for fuel used to generate electricity, electricity wholesale electricity purchases, emission allowances, and federally mandated carbon costs.

On December 17, 2008 the Commission approved the Company's ESP by stipulation, including implementation of the proposed programs and the save-a-watt revenue recovery proposal for energy efficiency and peak demand reduction. The Company eliminated its demand side management rider and implemented a rider establishing the Company's save-a-watt program effective January 1, 2009. The ESP will be in effect through December 31, 2011. Additionally, the Company developed a market potential study of energy efficiency in Ohio in order to better understand the amount of potential cost-effective energy efficiency available by customer class within its service territory.

Within the IRP process, Duke Energy Ohio has analyzed the impact on the IRP of an economic potential case for energy efficiency impacts that the Company believes is achievable considering the impacts potential identified in the market potential study. In addition, the Company also analyzed a high case for energy efficiency that is consistent with the legislative requirements established under SB 221.

All energy efficiency programs are screened for cost-effectiveness. The projected incremental load impacts of the programs included in the save-a-watt program discussed below have been incorporated into the optimization process of the IRP analysis.

Duke Energy's save-a-watt approach recognizes energy efficiency as a reliable, valuable resource, that is, a "fifth fuel," that should be part of the portfolio available to meet customers' growing need for electricity along with coal, nuclear, natural gas, or renewable energy. This "fifth fuel" helps customers meet their energy needs with less electricity, less cost and less environmental impact. The Company will manage energy efficiency as a reliable resource and provide customers with universal access to energy efficiency services and new technology.

Even with the increasing role energy efficiency will play in Duke's energy portfolio, pursuing efficiency initiatives will not meet all of Duke Energy Ohio's customers' growing demands for electricity. The Company still envisions the need to acquire additional resources whether through building clean coal and gas generation, cost-effective alternative energy resources and/or resources acquired through Request for Proposals (RFPs). Regardless, the save-a-watt approach can play an important role in addressing the total need.

Duke Energy Ohio's save-a-watt proposal is designed to expand the reach of energy efficiency programs in its Ohio retail service territory by providing the Company with appropriate regulatory incentives to aggressively pursue such expansion. The proposed regulatory treatment enables the Company to meet a portion of its substantial near-term capacity resource needs on a cost-effective basis, while at the same time reducing overall air emissions.

Furthermore, customers will be provided more options to control their energy bills. Over the long term, the regulatory treatment proposed by the Company should encourage the Company to pursue additional energy efficiency initiatives, further offsetting capacity needs.

Program Screening, Assumptions and Data Sources

The Company's measures and programs are analyzed by using DSMore, a financial analysis tool designed to evaluate the costs, benefits and risk of energy efficiency programs and measures. DSMore is a financial analysis tool designed to estimate the value of a DSM/EE measure at an hourly level across distributions of weather and/or energy costs of prices. By examining projected program performance and cost effectiveness over a wide variety of weather and cost conditions, the Company is in a better position to measure the risks and benefits of employing DSM/EE measures versus traditional generation capacity additions, and further, to ensure that DSM resources are compared to supply side resources on a level playing field.

The analysis of energy efficiency cost-effectiveness has traditionally focused primarily on the calculation of specific metrics, often referred to as the California Standard tests: Utility Cost Test (UCT), Rate Impact Measure (RIM) Test, Total Resource Cost (TRC) Test, Participant Test, and Societal Test. DSMore provides the results of those tests for any type of energy efficiency program (demand response and/or energy conservation).

- The UCT compares utility benefits (avoided costs) to incurred utility costs to implement the program, and does not consider other benefits such as participant savings or societal impacts. This test compares the cost (to the utility) to implement the measures with the savings or avoided costs (to the utility) resulting from the change in magnitude and/or the pattern of electricity consumption caused by implementation of the program. Avoided costs are considered in the evaluation of cost-effectiveness based on the projected cost of power, including the projected cost of power, including the projected cost of the utility's environmental compliance for known regulatory requirements. The cost-effectiveness analyses also incorporate avoided transmission and distribution costs, and load (line) losses.

- The RIM Test, or non-participants test, indicates if rates increase or decrease over the long-run as a result of implementing the program.
- The TRC test compares the total benefits to the utility and to participants relative to the costs to the utility to implement the program along with the costs to the participant. The benefits to the utility are the same as those computed under the UCT. The benefits to the participant are the same as those computed under the Participant Test, however, customer incentives are considered to be a pass-through benefit to customers. As such, customer incentives or rebates are not included in the TRC.
- The Participant Test compares the benefits to the participant through bill savings and incentives from the utility, relative to the costs to the participant for implementing the energy efficiency measure. The costs can include capital cost as well as increased annual operating costs, if applicable.

The use of multiple tests can ensure the development of a reasonable set of DSM/EE programs, indicate the likelihood that customers will participate and also protect against cross-subsidization. It should also be noted that none of the tests described above include external benefits to participants and non-participants that can also offset the costs of the programs.

The following table summarizes the cost effectiveness results for current programs, respectively.

Table 4.3

Cost Effectiveness Test Results of Proposed Programs				
	Utility Test	**TRC Test**	**RIM Test**	**Participant Test**
RESIDENTIAL CUSTOMER PROGRAMS				
Residential Energy Assessments	2.46	2.44	1.08	210.25
Residential Smart $aver® Energy Efficiency	2.42	1.21	0.88	2.43
Low Income Services	2.19	2.19	0.79	NA
Energy Efficiency Education Program for Schools	2.69	2.69	0.94	NA
Power Manager	1.40	1.67	1.40	NA
NON-RESIDENTIAL CUSTOMER PROGRAMS				
Non-Residential Energy Assessments	NA	NA	NA	NA
Smart $aver® for Non-Residential Customers	3.81	2.20	1.27	2.83
Power Share ®	3.54	29.79	1.23	NA
RESEARCH PILOT PROGRAMS				
Residential Prepaid Energy	2.13	2.13	0.86	NA

Current Status of Existing Energy Efficiency Programs

In July 2008, the Duke Energy Ohio filed its application for approval of energy efficiency and demand response programs under its save-a-watt initiative. These were approved by the Commission on December 17, 2008. The Company began implementation of the programs in early January 2009.

Under save-a-watt, the Company is reducing energy and demand on the Duke Energy Ohio system through the implementation of a broad set of energy efficiency programs that fall into two categories for residential and non-residential customers: conservation energy efficiency (EE) programs and demand response programs that contain customer-specific contract curtailment options and other demand response programs such as Power Manager® and PowerShare®. These programs are open to all customer classes, rather than just residential and small/medium business customers in the current portfolio of programs. The following are the current Energy Efficiency and Demand Response programs in place in Ohio:

Residential Programs

Smart $aver® Residential- provides incentives to residential customers for installing energy efficient equipment. This program addresses the market barrier of higher upfront costs of high efficiency equipment. The program is available to residential customers served by Duke Energy Ohio. A third party is under contract to process customer applications and maintain a list of participating HVAC and builders.

Residential Energy Assessment- offers an onsite energy assessment to qualified residential consumers. The program provides a customized report of energy savings opportunities and a free Energy Efficiency Starter Kit and additional CFL's in available sockets. By identifying the efficiency improvements, it confronts a significant market barrier, and customer awareness of potential savings. The program is available to individually metered residential customers receiving concurrent service from the Company. Assessments are only available to owner-occupied single family residences.

Energy Efficiency Education Program for Schools- educates students about sources of energy and energy efficiency in homes and schools and provides them the ability to conduct a home energy audit of their homes. This program will help homeowners identify efficiency savings, addressing the market barrier of lack of customer recognition of savings opportunities. Energy Efficiency Starter Kits are provided free to homes where students complete a home energy survey. Additional CFL's are also provided if available sockets are identified in the survey.

Low Income Services- provides assistance to low income customers through several measures. The upfront costs of high efficiency equipment are an especially difficult barrier for low income customers to overcome. This program leverages state weatherization funding by reimbursing community based organizations for the installation of measures that reduce energy consumption associated with electric space heating and water hearing in the homes of income-qualified Duke Energy Ohio customers. To be eligible, customers must qualify for weatherization or heating bill assistance as part of state or federal programs.

Power Manager- provides financial incentives to residential consumers that allow the company to cycle their outdoor compressor during peak energy periods via page between May and September when the load on Duke Energy Ohio's system reaches peak levels. Participating customers of the Company who has a functioning outdoor A/C unit are eligible for the program.

Prepaid Meter- program will allow customers to purchase their energy prior to consumption creating greater awareness of energy usage and promoting conservation. The program was not implemented initially due to equipment and software issues with the original supplier. The Company will now be leveraging its Smart Grid to provide customers with the most current technology platform. Initial deployment is anticipated to be in the third quarter of 2010.

Non Residential Programs

Smart $aver® Non-Residential- provides prescriptive incentives for businesses to install high efficiency equipment. This program addresses the market barrier of higher upfront costs of high efficiency equipment. Major categories include lighting, motors, pumps, VFD's, food service and process equipment. The program is available to new or existing non-residential facilities served by Duke Energy Ohio. The incentive process is handled by a third party vendor.

Custom Rebate- provides customized incentives to businesses for measures that meet cost effectiveness criteria and are not part of the Smart Saver Non-Residential Program. This program addresses the market barrier of higher upfront costs of high efficiency equipment.

PowerShare®- provides financial incentives for qualified businesses with a minimum of 100kW of curtailable load that can reduce load during peak periods. The program offers customized incentives depending upon the amount of energy reduced and the firmness of the consumer's commitment to reduce electrical load. Events are called either through MISO (Emergency) or the Company (Economic). When an event is called, customers are notified and their performance is monitored.

The following table lists information for 2009 save-a-watt programs.

Table 4.4

Residential Save-A- Watt Programs		
Program	**Participants/ Measures**	**Annual Cost**
Low-Income Weatherization Refrigerator Replacement	79	$79,612
Low Income Weatherization	56	$134,657
Home Energy House Call	4,214	$1,255,793
Online Audit	1,910	$85,291
Personalized Energy Report	5,009	$182,538
K-12 Education Program	1,781	$828,332
Smart Saver® -Central Air Conditioner	1,860	$365,623
Smart Saver®- Heat Pump	2,246	$729,592
Smart Saver®- Residential Compact Fluorescent Light Promo	156,851	$555,998
Power Manager	26,046	$2,695,553
Non Residential Save-A- Watt Programs		
PowerShare®	N/A	$897,812
Smart Saver Non-Residential	152,347	$2,131,822
Custom Rebate	9,343	$496,911

Table 4.5 below provides the economic potential case projected load impacts of the conservation and DSM or demand response portfolio of products and services through 2025. These were included in the IRP analysis. The assumption in this case was that the level of incremental annual energy efficiency MWH achievement would track the SB 221 requirements until the level of 1% per year was reached. At that point, the incremental achievement is held at 1% per year until the economic potential is reached (13%) as identified in the Company's market potential study for energy efficiency.

Table 4.5

Economic Potential Case Projected Load Impacts
Conservation and Demand-Side Management Programs

	Conservation Program Load Impacts MWH			Summer Peak MW	Demand-Side Management Program Impacts Summer Peak MW			Summer Peak MW
Year	Residential	Non-residential	Total	Total	Interruptible	Power Manager	Total	Total MW Impacts
2010	61,266	49,465	110,731	21.0	109.1	36.8	145.9	166.9
2011	147,733	113,283	261,016	43.0	122.8	40.4	163.2	206.2
2012	249,227	178,295	427,522	64.0	131.3	40.4	171.7	235.7
2013	367,883	246,671	614,555	97.0	136.7	40.4	177.1	274.1
2014	493,095	329,386	822,482	127.0	136.7	40.4	177.1	304.1
2015	612,390	416,963	1,029,353	154.0	136.7	40.4	177.1	331.1
2016	736,316	497,649	1,233,965	181.0	136.7	40.4	177.1	358.1
2017	864,513	571,873	1,436,386	209.0	136.7	40.4	177.1	386.1
2018	985,206	651,550	1,636,756	234.0	136.7	40.4	177.1	411.1
2019	1,099,473	735,821	1,835,294	260.0	136.7	40.4	177.1	437.1
2020	1,218,828	813,468	2,032,296	286.0	136.7	40.4	177.1	463.1
2021	1,342,848	884,990	2,227,838	311.0	136.7	40.4	177.1	488.1
2022	1,464,397	957,790	2,422,187	334.0	136.7	40.4	177.1	511.1
2023	1,581,512	1,034,431	2,615,943	357.0	136.7	40.4	177.1	534.1
2024	1,581,598	1,034,345	2,615,943	356.0	136.7	40.4	177.1	533.1
2025	1,581,490	1,034,453	2,615,943	359.0	136.7	40.4	177.1	536.1
2026	1,581,418	1,034,525	2,615,943	357.0	136.7	40.4	177.1	534.1
2027	1,581,486	1,034,457	2,615,943	360.0	136.7	40.4	177.1	537.1
2028	1,581,589	1,034,354	2,615,943	357.0	136.7	40.4	177.1	534.1
2029	1,581,424	1,034,519	2,615,943	358.0	136.7	40.4	177.1	535.1
2030	1,581,407	1,034,536	2,615,943	360.0	136.7	40.4	177.1	537.1
2031	1,581,490	1,034,453	2,615,943	359.0	136.7	40.4	177.1	536.1
2032	1,581,620	1,034,323	2,615,943	358.0	136.7	40.4	177.1	535.1
2033	1,581,537	1,034,406	2,615,943	360.0	136.7	40.4	177.1	537.1
2034	1,581,512	1,034,431	2,615,943	358.0	136.7	40.4	177.1	535.1

Table 4.6 provides a high case scenario designed to achieve the legislative requirements of SB 221. This far exceeds the level of the identified economic potential for energy efficiency.

Table 4.6

High Case Projected Load Impacts
Conservation and Demand-Side Management Programs

	Conservation Program Load Impacts MWH			Summer Peak MW	Demand-Side Management Program Impacts Summer Peak MW			Summer Peak MW
Year	Residential	Non-residential	Total	Total	Interruptible	Power Manager	Total	Total MW Impacts
2010	61,266	49,465	110,731	21.0	109.1	36.8	145.9	166.9
2011	147,733	113,283	261,016	48.0	122.8	40.4	163.2	211.2
2012	249,227	178,295	427,522	76.0	131.3	40.4	171.7	247.7
2013	367,883	246,671	614,555	112.0	136.7	40.4	177.1	289.1
2014	493,095	329,386	822,482	147.0	136.7	40.4	177.1	324.1
2015	612,390	416,963	1,029,353	184.0	136.7	40.4	177.1	361.1
2016	736,316	497,649	1,233,965	219.0	136.7	40.4	177.1	396.1
2017	864,513	571,873	1,436,386	255.0	136.7	40.4	177.1	432.1
2018	985,206	651,550	1,636,756	291.0	136.7	40.4	177.1	468.1
2019	1,218,411	815,420	2,033,831	361.0	136.7	40.4	177.1	538.1
2020	1,455,251	971,261	2,426,512	429.0	136.7	40.4	177.1	606.1
2021	1,695,948	1,117,696	2,813,645	500.0	136.7	40.4	177.1	677.1
2022	1,931,310	1,263,176	3,194,486	561.0	136.7	40.4	177.1	738.1
2023	2,158,494	1,411,822	3,570,316	634.0	136.7	40.4	177.1	811.1
2024	2,383,302	1,558,648	3,941,951	698.0	136.7	40.4	177.1	875.1
2025	2,605,654	1,704,359	4,310,013	760.0	136.7	40.4	177.1	937.1
2026	2,605,535	1,704,477	4,310,013	760.0	136.7	40.4	177.1	937.1
2027	2,605,648	1,704,365	4,310,013	763.0	136.7	40.4	177.1	940.1
2028	2,605,816	1,704,197	4,310,013	768.0	136.7	40.4	177.1	945.1
2029	2,605,545	1,704,468	4,310,013	770.0	136.7	40.4	177.1	947.1
2030	2,605,517	1,704,496	4,310,013	767.0	136.7	40.4	177.1	944.1
2031	2,605,654	1,704,359	4,310,013	766.0	136.7	40.4	177.1	943.1
2032	2,605,868	1,704,144	4,310,013	763.0	136.7	40.4	177.1	940.1
2033	2,605,731	1,704,282	4,310,013	766.0	136.7	40.4	177.1	943.1
2034	2,605,690	1,704,323	4,310,013	770.0	136.7	40.4	177.1	947.1

The following two tables show the development of the energy efficiency cases relative to the Company's Fall 2009 forecast. This analysis was performed using the 2009 forecast since the load forecast was not completed at the time the energy efficiency scenarios were prepared. There may always be a one year lag in this process.

Table 4.7

Development of the Economic Potential Case

Year	Retail Sales MWH	Fall 2009 WN Retail Sales MWH	Retail Sales With Losses MWH	Retail Sales Adjusted for EE MWH	Moving Average Prior 3 Years	Base case % Impacts	EE Impacts MWH	Cumulative EE Impacts MWH	Cumulative EE Impacts adjusted For 2010 Start
2006	22,402,660	22,820,706	22,820,706						
2007	23,510,777	22,665,556	22,665,556						
2008	22,321,489	22,746,814	22,746,814						
2009		21,094,496	21,094,496	21,026,263	22,744,359	0.3%	68,233	68,233	-
2010	19570795	20,813,524	20,813,524	20,634,560	22,146,211	0.5%	110,731	178,964	110,731
2011	19782125	21,108,498	21,108,498	20,779,249	21,469,212	0.7%	150,284	329,249	261,016
2012	20244691	21,425,987	21,425,987	20,930,232	20,813,357	0.8%	166,507	495,755	427,522
2013	20698966	21,351,424	21,351,424	20,668,636	20,781,347	0.9%	187,032	682,788	614,555
2014	21011785	21,353,156	21,353,156	20,462,441	20,792,706	1.0%	207,927	890,715	822,482
2015	21198558	21,350,308	21,350,308	20,252,722	20,687,103	1.0%	206,871	1,097,586	1,029,353
2016	21371055	21,313,312	21,313,312	20,011,114	20,461,267	1.0%	204,613	1,302,198	1,233,965
2017	21554053	21,351,745	21,351,745	19,847,126	20,242,092	1.0%	202,421	1,504,619	1,436,386
2018	21729742	21,408,061	21,408,061	19,703,072	20,036,987	1.0%	200,370	1,704,989	1,636,756
2019	21896135	21,453,933	21,453,933	19,550,406	19,853,770	1.0%	198,538	1,903,527	1,835,294
2020	22081442	21,509,706	21,509,706	19,409,177	19,700,201	1.0%	197,002	2,100,529	2,032,296
2021	22272078	21,641,256	21,641,256	19,345,185	19,554,218	1.0%	195,542	2,296,071	2,227,838
2022	22490129	21,862,829	21,862,829	19,372,409	19,434,923	1.0%	194,349	2,490,420	2,422,187
2023	22646129	22,024,289	22,024,289	19,340,113	19,375,590	1.0%	193,756	2,684,176	2,615,943
2024	22850563	22,233,696	22,233,696	19,549,520	19,352,569	0.0%	-	2,684,176	2,615,943
2025	23109393	22,518,916	22,518,916	19,834,740	19,420,680	0.0%	-	2,684,176	2,615,943
2026	23391797	22,808,752	22,808,752	20,124,576	19,574,791	0.0%	-	2,684,176	2,615,943
2027	23685471	23,107,860	23,107,860	20,423,684	19,836,278	0.0%	-	2,684,176	2,615,943
2028	23968025	23,400,660	23,400,660	20,716,484	20,127,666	0.0%	-	2,684,176	2,615,943
2029	24207718	23,657,354	23,657,354	20,973,178	20,421,581	0.0%	-	2,684,176	2,615,943
2030	24491315	23,950,217	23,950,217	21,266,041	20,704,448	0.0%	-	2,684,176	2,615,943
2031	24841335	24,318,659	24,318,659	21,634,483	20,985,234	0.0%	-	2,684,176	2,615,943
2032	25242232	24,736,919	24,736,919	22,052,743	21,291,234	0.0%	-	2,684,176	2,615,943

Table 4.8

Development of the High Case

Year	Retail Sales MWH	Fall 2009 WN Retail Sales MWH	Retail Sales With Losses MWH	Retail Sales Adjusted for EE MWH	Moving Average Prior 3 Years	Base case % Impacts	EE Impacts MWH	Cumulative EE Impacts MWH	Cumulative EE mpacts adjustec For 2010 Start
2006	22,402,660	22,820,706	22,820,706						
2007	23,510,777	22,665,556	22,665,556						
2008	22,321,489	22,746,814	22,746,814						
2009		21,094,496	21,094,496	21,026,263	22,744,359	0.3%	68,233	68,233	-
2010		20,813,524	20,813,524	20,634,560	22,146,211	0.5%	110,731	178,964	110,731
2011		21,108,498	21,108,498	20,779,249	21,469,212	0.7%	150,284	329,249	261,016
2012		21,425,987	21,425,987	20,930,232	20,813,357	0.8%	166,507	495,755	427,522
2013		21,351,424	21,351,424	20,668,636	20,781,347	0.9%	187,032	682,788	614,555
2014		21,353,156	21,353,156	20,462,441	20,792,706	1.0%	207,927	890,715	822,482
2015		21,350,308	21,350,308	20,252,722	20,687,103	1.0%	206,871	1,097,586	1,029,353
2016		21,313,312	21,313,312	20,011,114	20,461,267	1.0%	204,613	1,302,198	1,233,965
2017		21,351,745	21,351,745	19,847,126	20,242,092	1.0%	202,421	1,504,619	1,436,386
2018		21,408,061	21,408,061	19,703,072	20,036,987	1.0%	200,370	1,704,989	1,636,756
2019		21,453,933	21,453,933	19,351,868	19,853,770	2.0%	397,075	2,102,065	2,033,831
2020		21,509,706	21,509,706	19,014,961	19,634,022	2.0%	392,680	2,494,745	2,426,512
2021		21,641,256	21,641,256	18,759,378	19,356,634	2.0%	387,133	2,881,878	2,813,645
2022		21,862,829	21,862,829	18,600,110	19,042,069	2.0%	380,841	3,262,719	3,194,486
2023		22,024,289	22,024,289	18,385,740	18,791,483	2.0%	375,830	3,638,549	3,570,316
2024		22,233,696	22,233,696	18,223,512	18,581,743	2.0%	371,635	4,010,184	3,941,951
2025		22,518,916	22,518,916	18,140,670	18,403,121	2.0%	368,062	4,378,246	4,310,013
2026		22,808,752	22,808,752	18,430,506	18,249,974	0.0%	-	4,378,246	4,310,013
2027		23,107,860	23,107,860	18,729,614	18,264,896	0.0%	-	4,378,246	4,310,013
2028		23,400,660	23,400,660	19,022,414	18,433,597	0.0%	-	4,378,246	4,310,013
2029		23,657,354	23,657,354	19,279,108	18,727,511	0.0%	-	4,378,246	4,310,013
2030		23,950,217	23,950,217	19,571,971	19,010,379	0.0%	-	4,378,246	4,310,013
2031		24,318,659	24,318,659	19,940,413	19,291,164	0.0%	-	4,378,246	4,310,013
2032		24,736,919	24,736,919	20,358,673	19,597,164	0.0%	-	4,378,246	4,310,013

The final two tables provide calculations of the achievement towards the peak benchmarks. In both the low and the high case, it is expected that the peak load achievements will far exceed the benchmark requirements.

Table 4.9

Assessment of Peak Benchmark Achievement for the Economic Potential Case

Year	Peak Demand (MW)	Weather Normalization Adjustment (MW)	Weather Normal Level of Peak Demand (MW)	Three Year Moving Average Average (MW)	New EE MW	Cumulative EE MW	Projected DR MW	Total Projected Impacts	Cumulative Percentage Impacts	Benchmark Percentage	Cumulative Benchmark Percentage
2006	4,520	71	4,591								
2007	4,607	(279)	4,328								
2008	4,125	337	4,462								
2009			4,517	4,460		48.9	48.5	97.4	2.2%	1.00%	1.00%
2010			4,550	4,436	21.0	69.9	145.9	215.8	4.9%	0.75%	1.75%
2011			4,554	4,443	43.0	91.9	163.2	255.1	5.7%	0.75%	2.50%
2012			4,430	4,407	64.0	112.9	171.7	284.6	6.5%	0.75%	3.25%
2013			4,436	4,378	97.0	145.9	177.1	323.0	7.4%	0.75%	4.00%
2014			4,459	4,407	127.0	175.9	177.1	353.0	8.0%	0.75%	4.75%
2015			4,491	4,442	154.0	202.9	177.1	380.0	8.6%	0.75%	5.50%
2016			4,523	4,462	181.0	229.9	177.1	407.0	9.1%	0.75%	6.25%
2017			4,557	4,491	209.0	257.9	177.1	435.0	9.7%	0.75%	7.00%
2018			4,588	4,524	234.0	282.9	177.1	460.0	10.2%	0.75%	7.75%
2019			4,617	4,556	260.0	308.9	177.1	486.0	10.7%		
2020			4,648	4,587	286.0	334.9	177.1	512.0	11.2%		
2021			4,674	4,618	311.0	359.9	177.1	537.0	11.6%		
2022			4,704	4,646	334.0	382.9	177.1	560.0	12.1%		
2023			4,728	4,675	357.0	405.9	177.1	583.0	12.5%		
2024			4,747	4,700	356.0	404.9	177.1	582.0	12.4%		
2025			4,783	4,725	359.0	407.9	177.1	585.0	12.4%		
2026			4,821	4,751	357.0	405.9	177.1	583.0	12.3%		
2027			4,865	4,784	360.0	408.9	177.1	586.0	12.2%		
2028			4,907	4,823	357.0	405.9	177.1	583.0	12.1%		
2029			4,948	4,864	358.0	406.9	177.1	584.0	12.0%		
2030			4,991	4,907	360.0	408.9	177.1	586.0	11.9%		
2031			5,049	4,949	359.0	407.9	177.1	585.0	11.8%		
2032			5,114	4,996	358.0	406.9	177.1	584.0	11.7%		

Table 4.10

Assessment of Peak Benchmark Achievement for the High Case

Year	Peak Demand (MW)	Weather Normalization Adjustment (MW)	Weather Normal Level of Peak Demand (MW)	Three Year Moving Average Average (MW)	New EE MW	Cumulative EE MW	Projected DR MW	Total Projected Impacts	Cumulative Percentage Impacts	Benchmark Percentage	Cumulative Benchmark Percentage
2006	4,520	71	4,591								
2007	4,607	(279)	4,328								
2008	4,125	337	4,462								
2009			4,517	4,460		48.9	48.5	97.4	2.2%	1.00%	1.00%
2010			4,350	4,436	21.0	69.9	145.9	215.8	4.9%	0.75%	1.75%
2011			4,354	4,443	48.0	96.9	163.2	260.1	5.9%	0.75%	2.50%
2012			4,430	4,407	76.0	124.9	171.7	296.6	6.7%	0.75%	3.25%
2013			4,436	4,378	112.0	160.9	177.1	338.0	7.7%	0.75%	4.00%
2014			4,459	4,407	147.0	195.9	177.1	373.0	8.5%	0.75%	4.75%
2015			4,491	4,442	184.0	232.9	177.1	410.0	9.2%	0.75%	5.50%
2016			4,523	4,462	219.0	267.9	177.1	445.0	10.0%	0.75%	6.25%
2017			4,557	4,491	255.0	303.9	177.1	481.0	10.7%	0.75%	7.00%
2018			4,588	4,524	291.0	339.9	177.1	517.0	11.4%	0.75%	7.75%
2019			4,617	4,556	361.0	409.9	177.1	587.0	12.9%		
2020			4,648	4,587	429.0	477.9	177.1	655.0	14.3%		
2021			4,674	4,618	500.0	548.9	177.1	726.0	15.7%		
2022			4,704	4,646	561.0	609.9	177.1	787.0	16.9%		
2023			4,723	4,675	634.0	682.9	177.1	860.0	18.4%		
2024			4,747	4,700	698.0	746.9	177.1	924.0	19.7%		
2025			4,783	4,725	760.0	808.9	177.1	986.0	20.9%		
2026			4,821	4,751	760.0	808.9	177.1	986.0	20.8%		
2027			4,865	4,784	763.0	811.9	177.1	989.0	20.7%		
2028			4,907	4,823	768.0	816.9	177.1	994.0	20.6%		
2029			4,948	4,864	770.0	818.9	177.1	996.0	20.5%		
2030			4,991	4,907	767.0	815.9	177.1	993.0	20.2%		
2031			5,049	4,949	766.0	814.9	177.1	992.0	20.0%		
2032			5,114	4,996	763.0	811.9	177.1	989.0	19.8%		

I. ALTERNATIVE ENERGY RESOURCES

1. Requirements

SB 221 establishes a 25% AER portfolio requirement that must be met by 2025. At least one-half of the AER requirement must be satisfied by renewable energy resources. The renewable requirement also includes a specific "set-aside" for solar energy resources. The annual benchmarks for the renewable energy requirements are as follows:

Table 4.11

ALTERNATE ENERGY RESOURCE REQUIREMENTS

By end of year:	Total renewable energy resources	Solar energy resources
2009	0.25%	0.004%
2010	0.50%	0.01%
2011	1.0%	0.03%
2012	1.5%	0.06%
2013	2.0%	0.09%
2014	2.5%	0.12%
2015	3.5%	0.15%
2016	4.5%	0.18%
2017	5.5%	0.22%
2018	6.5%	0.26%
2019	7.5%	0.30%
2020	8.5%	0.34%
2021	9.5%	0.38%
2022	10.5%	0.42%

By end of year:	Total renewable energy resources	Solar energy resources
2023	11.5%	0.46%
2024 and each year thereafter	12.5%	0.50%

compliance with these renewable energy mandates using RECs. As defined in SB 221, RECs SB 221 measures consist of the environmental attributes associated with one megawatt-hour of electricity generated by a renewable energy resource.

2. Qualified Renewable Resources

The following resources or technologies, if they have a placed-in-service date of January 1, 1998, or after, are qualified resources for meeting the renewable energy resource benchmarks: solar photovoltaic or solar thermal energy; wind energy; hydroelectric energy; geothermal energy; solid waste energy derived from fractionalization, biological decomposition, or other process that does not principally involve combustion; biomass energy; energy from a fuel cell; a storage facility (provided that a.) the electricity used to pump the resource into a storage reservoir must qualify as a renewable energy resource, or the equivalent renewable energy credits are obtained; and b.) that the amount of energy that may qualify from a storage facility is the amount of electricity dispatched from the storage facility); a distributed generation system used by a customer to generate electricity from a qualified list of resources or technologies; and a renewable energy resource created on or after January 1, 1998, by the modification or retrofit of any facility placed in service prior to January 1, 1998.

SB 221 mandates that at least half of the resources used to comply with the renewable energy portfolio standard come from sources which are based in the state of Ohio. The remaining half must come from supply sources which are deliverable into the state, or are located within one of Ohio's five contiguous states (Pennsylvania, West Virginia, Kentucky, Indiana and Michigan).

3. Qualified Advanced Energy Resources

Qualified advanced energy resources include technological improvements that increase a generating facility's output without a corresponding increase in emissions; distributed generation that relies on co-generation of electricity and thermal output; clean coal; advanced nuclear energy; fuel cell; advanced solid waste or construction and demolition debris technology; and DSM and energy efficiency. Annual benchmarks leading up to 2025 were not established in SB 221 for advanced energy resources in the same way that they were for renewable energy resources.

In summary, by 2025, Ohio SB 221 requires that Duke Energy Ohio obtain 25% of its electricity supply from AERs, with a minimum of 12.5% coming from renewable resources.

4. Discussion of Renewable Compliance Strategy

Duke Energy Ohio seeks to pursue a renewable compliance strategy that, over time, balances the ownership of some renewable resources with contracts with third parties of varying duration. The Company believes this strategy is prudent as it presents a flexible and diversified approach to satisfying renewable energy requirements.

Up until now, the compliance strategy of Duke Energy Ohio has consisted only of short-term market REC purchases. The primary reason for this decision is that contracts with third parties extending beyond the end of the present SSO (12/31/2011) present cost recovery uncertainties that the Company feels would be imprudent to assume. Among the four compliance categories (Ohio solar, Non-Ohio solar, Ohio non-solar, and Non-Ohio non-solar), the Ohio solar category currently presents the greatest compliance challenge due to the relative scarcity of in-state solar generation resources. The Company continues to pursue short-term market REC purchases as its key means to comply, but recognizes that other efforts may be needed in order to insure compliance with the annually-increasing renewable requirements over the long term.

Duke Energy Ohio has considered ownership of renewable resources as an option that could resolve these cost recovery challenges inherent in long-term contracts with third parties. Duke Energy Ohio has focused mostly on pursuing ownership of Ohio solar resources due to the relative scarcity of these resources, as noted previously. At the present time, the Company has not initiated construction of any Company-owned solar resources, but continues to seriously consider this option in light of its compliance requirements. This Plan identifies the new build requirements that are needed to assure compliance. Over the near term, it is assumed that the current uncertainties of cost recovery with long-term third party contracts will continue, although it is possible that legislative or regulatory changes will be made at some point in the future to resolve these challenges. While these cost recovery uncertainties exist, the Company is presently of the position that its compliance strategy will consist of short term REC purchases and ownership of renewable resources, and that it will consider long term contracts with third parties as an additional strategy if the applicable cost recovery uncertainties are adequately addressed. An exception to the aforementioned discussion is the Company's proposed residential solar REC purchase program, which has not been approved by the Commission at this time. This proposed program would commit the Company to enter into long term REC purchase agreements with residential customers, provided that cost recovery of those contracts was assured by the Commission. However, this proposed program is not expected to contribute to the Company's total compliance requirements on a material basis due to the relatively small size of the applicable solar installations that would be targeted (residential homes). More details on the necessary renewable resource additions to meet the compliance requirements follow.

5. Renewable Energy in the Resource Planning Model

For the purposes of the resource planning model, Duke Energy Ohio assumed that a combination of solar and wind resources would be used to satisfy renewable requirements. The Company assumed photovoltaic solar because of the specific "set-aside" and then included wind because it is a familiar and widespread renewable resource in the Midwest. In general, the need for each resource was increased in accordance with the levels proscribed in SB 221, except for certain portfolios that included plans to use electricity generated from biomass, which is also an approved renewable energy source.

Specifically, the Resource Plan assumes the following:

- **Near-Term Renewable Compliance Strategy (2010-2011):** Near-term renewable compliance for solar and non-solar will primarily be met with market REC purchases. In addition, Duke Energy Ohio is evaluating ownership of up to 1 MW of in-state solar prior to the end of 2011 as a means of insuring compliance with its Ohio solar requirements.
- **Long-Term Renewable Compliance Strategy (2012+):** In 2012 and beyond, Duke Energy Ohio has assumed that renewable compliance will consist of approximately 50% REC purchases, and the remaining 50% of the compliance requirements coming from renewable resources that will deliver both energy and RECs. For resource planning purposes, REC purchases do not serve to meet the Company's energy or capacity requirements, while renewable resources that contribute both energy and RECs would contribute to these requirements. The resources that contribute both energy and RECs could either be owned by Duke Energy Ohio or they could be obtained via contract with third parties under long term

contracts. In addressing the energy and capacity needs of the company, the resource planning model is indifferent as to whether Duke Energy Ohio or a third party owns these resources. For purposes of the resource planning model, it is assumed that the renewable resources that contribute energy and RECs are all either solar or wind projects. Wind projects are assumed to be added in 50 MW increments beginning in 2014, and solar projects are added in 3 MW increments beginning in 2012. These resource additions are in line with the resource needs which will be necessary to meet the renewable requirements established by SB 221.

The following Table 4.12 shows the nameplate additions of wind and solar capacity in increments.

Table 4.12

Nameplate Capacity Additions Incremental										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wind					50	50	50	50	50	50
Solar		1	3	3	3	3	3	3	3	3
Total	0	1	3	3	53	53	53	53	53	53
Nameplate Capacity Additions Total										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wind	0	0	0	0	50	100	150	200	250	300
Solar	0	1	4	7	10	13	16	19	22	25
Total	0	1	4	7	60	113	166	219	272	325

The renewable resource additions identified above are included in the Resource Plan to meet the 12.5% SB 221 renewable requirements. These installed nameplate capacities are adjusted to reflect the intermittent capacity allocation guidance from PJM, so the adjusted wind and solar capacity resources that can be counted as firm capacity resources are shown in Table 4.13. PJM counts 38% of solar capacity and 13% of wind capacity for coincident peak reserve margin requirements.

Table 4.13

Renewable Capacity Resources at Summer Peak Incremental										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wind	0	0	0	0	6.5	6.5	6.5	6.5	6.5	6.5
Solar	0	0.38	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Total	0	0.38	1.14	1.14	7.64	7.64	7.64	7.64	7.64	7.64
Renewable Capacity at Summer Peak Total										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wind	0	0	0	0	6.5	13	19.5	26	32.5	39
Solar	0	0.38	1.52	2.66	3.8	4.94	6.08	7.22	8.36	9.5
Total	0	0.38	1.52	2.66	10.3	17.94	25.58	33.22	40.86	48.5

6. Intermittency and Capacity Factors

Both solar and wind installed capacity resources are classified as intermittent by both the PJM and MISO since these resources have varying generation profiles which are subject to the prevailing meteorological conditions. As such, actual energy production may not occur at the specific times when energy is most needed, such as the peak periods of each day. With this in mind, it is important to look closely at the actual amount of energy and capacity each resource contributes to the grid at any point in time. Therefore to meet the requirements in SB 221, significant amounts of capacity would have to be built in order to achieve the necessary production for compliance.

Based on the company's prior experience, solar resources have annual capacity factors that range from 11% to 25%, depending on the location and technology used. Wind in the

Midwest typically has annual capacity factors that can range from 25% to 40% depending, too, on the location and technology used. Cost, capacity factor values and energy production were assigned based on results from solicited and unsolicited proposals from third party developers received by Duke Energy Ohio, as well as appropriate estimates for capital and fixed costs based on internal estimates and applicable tax credits.

7. Biomass

In addition to the wind and solar renewable technology listed above, Duke Energy Ohio has included biomass as a renewable energy option in two portfolios. Biomass energy can be produced by utilizing biomass feedstocks in either dedicated biomass combustion facilities, or co-fired with coal in existing coal stations. Duke Energy Ohio is evaluating the possible option to co-fire biomass opportunities at several coal facilities as a way of producing renewable energy to satisfy Ohio non-solar requirements. Biomass co-firing test burns were conducted at the Beckjord facility located in New Richmond, Ohio, in the Spring of 2010. Based on the results, other test burns are being considered at other of Duke Energy Ohio-owned or co-owned coal facilities. Beckjord units 1 and 2 are also being considered for repowering to burn 100 % biomass by converting the boilers to fluidized bed technology. Duke Energy Ohio's coal-fired Killen station, (which is operated by Dayton Power & Light via joint ownership agreement) is planning to co-fire up to 5 percent biomass, rated by heat.

As biomass evaluations at Beckjord units 1-2 and co-fire testing/planning is completed, future biomass activities may be incorporated Duke Energy Ohio's renewable requirement compliance plans and included in future resource plans.

Duke Energy Ohio will continue to evaluate its options for satisfying its AER requirement and will make adjustments to the AER resources that make up the selected resource plan based on factors such as cost recovery challenges, and the availability and prices of RECs.

J. SUPPLY SIDE RESOURCES

1. Overview

An assortment of supply-side resources was considered as potential alternatives to meet future capacity and energy resource needs for the Ohio Resource Plan. Experience gained from the development of prior Duke Energy Midwest IRPs for Indiana and Kentucky were used to streamline the supply side resource selection. Supply side resources selected in this process were used as potential resource alternatives in combination with renewable generation resources to develop an integrated resource plan to meet future customer resource requirements. Specific prior analyses steps for selection of potential supply side options include:

- Technical Screening - The initial step in the supply-side screening process was a technical screening of the technologies to eliminate those that have technical limitations, commercial availability issues, or are not feasible in the Duke Energy Ohio service territory.
- Economic Screening – The technologies were screened using relative dollar per kilowatt-year versus capacity factor screening curves. The screening within each technology type (baseload, intermittent, and peaking) used a spreadsheet-based screening curve model developed by Duke Energy Midwest.

As a result, supply-side options that were commercially available technologies and consistently cost effective were considered "Best in Class" within each technology type, such as simple cycle combustion turbine, combined cycle, wind, and advanced coal/nuclear units. The largest practical sizes of each technology were primarily considered to include the lowest cost due to economies of scale. A diverse range of technology choices utilizing a variety of different fuels was considered including advanced nuclear, wind, Integrated Coal Gasification Combined Cycle (IGCC) with carbon sequestration, combustion turbines, and combined cycle units. Technologies representing each category of baseload, peaking and intermediate supply side resources were included to meet all potential customer resource needs.

Duke Energy Ohio has at least two options to procure needed traditional generation capacity: 1) own generation; or 2) purchase capacity in the market. Estimating the cost of ownership or of purchasing capacity beyond the near term is an inexact science, but the cost of both owned capacity or capacity contracts should trend toward the marginal cost of building new capacity. For the purposes of this Plan, the Company has represented any needed peaking or intermediate capacity as purchases that are based on the cost of building new combustion turbine or combined cycle capacity, respectively. Such a representation gives the Company flexibility to make decisions to purchase short term capacity (such as the MISO/PJM capacity market and/or bilateral purchase power agreements) or build/purchase assets at the appropriate time taking into consideration customer switching and current market prices. Duke Energy will regularly assess it future near term resource needs and make decisions on MISO/PJM capacity purchases, short term PPAs or new build options in line with the strategic direction selected in the Plan.

2. Selected Supply Side Technologies

For the Plan, potential supply side resources selected for detailed modeling included technologies that were commercially available, consistently cost effective relative to other technologies and represented new technologies to address an expected low carbon future environment. Specifically new supply side technologies that are believed to meet the AER requirements of SB 221 required by 2025 include new advanced nuclear and 90 % carbon sequestered IGCC technologies for base load technologies.

To explore potential nuclear options in Ohio, the Company announced on June 18, 2009 the formation of an alliance between Duke Energy, AREVA, USEC Inc., UniStar Nuclear Energy and the Southern Ohio Diversification Initiative to pursue the Southern Ohio Clean Energy Park Alliance (SOCEPA) in Piketon, Ohio. Although Duke Energy Ohio has entered into the Alliance, the Company has not made a decision to build a nuclear plant at the Piketon site, nor at any other site in the Midwest region. Duke Energy has also not selected a specific technology. Duke Energy Ohio is moving forward in 2010 to conduct a number of site suitability studies to assess whether the Piketon site is a viable site for a nuclear power plant. The studies will evaluate some key technical and environmental factors that are critical to the successful siting of a nuclear power plant.

Renewable technologies are also an integral part of the overall resource plan as mandated in SB 221. Renewable generation technologies including wind, solar, and dedicated biomass generation are included in the list of the selected supply side technologies.

Supply side resources selected for further integrated resource planning modeling based on technical and economic screening include the following:

- Combustion Turbine (peaking capacity annual purchases)
- Combined Cycle (intermediate capacity annual purchases)
- 630 MW Class Integrated Gasified Combined Cycle Coal (IGCC)
- Advanced Nuclear Capacity in segments of 400 MWs, 800 MWs and 1600 MWs
- 50 MW Wind (renewable)

- 3 MW Solar Photovoltaic (renewable)
- 50 MW Woody Biomass (renewable)

K. RESOURCE PLAN

The development of the Plan combines the customer load forecast, energy efficiency programs, DSM programs, renewable resources, existing supply-side generation, and potential new supply-side resources into the planning process. Computer models used to perform this integration process are System Optimizer (SO) and Planning & Risk (PAR) owned by Ventyx (recently purchased by ABB).

System Optimizer is an expansion planning model that dynamically analyzes the cost-effectiveness of a multitude of combinations of resource alternatives to meet the reliability criteria of a minimum reserve margin. The model performs an economic dispatch of numerous potential combinations of resource plans to determine the lowest cost or Net Present Value (NPV) plan, considering capital, operations and maintenance costs, and total production costs. System Optimizer enables Duke Energy Ohio to consider various alternative planning environments such as different forecasts of fuel prices, CO_2 cost trajectories for carbon legislation, supply side generation capital costs, and levels of future energy efficiency accomplishments. Using SO to identify the lowest cost expansion plans for alternative planning environments allows Duke Energy to examine the performance of the "best" resource plans against many different possible futures.

The various resource plans generated through SO are examined to identify potential alternative resource plans that will be tested in the detailed production costing simulations with the PAR model. The PAR model is similar to the detailed PROMOD production costing model (another Ventyx production costing model) in that both models perform detailed generating resource hourly dispatch to simulate total production costs of every modeled resource plan. In particular, alternative resource plans are developed to explore resource decisions that will be needed over the next few years. For example, plans with near-term peaking capacity were developed for comparison to place with near-term intermediate capacity. Plans with and without nuclear were developed to determine if nuclear could be beneficial to Duke Energy Ohio's customers. While new advanced nuclear generation is not feasible within the 10 year reporting horizon, the analysis can help determine whether it is beneficial to keep the option open for beyond the 10 year reporting horizon. After each alternative resource plan is modeled in PAR, the production costing results are compared along with total capital costs to compare the total cost to ratepayers for each plan. The resource plan that performs cost effectively across multiple different planning environments with due consideration of qualitative issues is selected as the most "robust" resource plan for its ability to operate cost effectively in multiple future environments.

L. SYSTEM OPTIMIZER RESOURCE PORTFOLIO ALTERNATIVES

The SO capacity expansion model was used to develop alternative resource portfolios across several different planning environments. Due to the uncertainty associated with potential carbon legislation and levels of energy efficiency that can be accomplished over the planning horizon, four different planning environments were created:

- Low range cost Carbon Legislation, SB 221 Energy Efficiency Targets
- Low range cost Carbon Legislation, Economic Potential Energy Efficiency
- High range cost Carbon Legislation, SB 221 Energy Efficiency Targets
- High range cost Carbon Legislation, Economic Potential Energy Efficiency

The four different planning environments were not created to model specific legislation but rather some of the main attributes contained in proposed carbon legislation. For example, the low range carbon cost is based in part on the Waxman-Markey proposal, allowing international and domestic offsets to suppress carbon costs in the near term. The high range carbon cost is based in part on the Baucher proposal that has less offsets available, so the carbon cost profile would likely be higher. The high and low cost ranges were used to set the upper and lower boundary for carbon pricing so that proposed resource plans could be evaluated against both pricing extremes. Additionally, two ranges of energy efficiency levels were considered including the SB 221 target of 22% reductions by 2025 and Duke's assessment of energy efficiency economic potential. The Economic Potential Case tracks the level of incremental annual energy efficiency MWH achievement consistent with the SB 221 requirements until the level of 1% per year was reached. At that point, the incremental achievement is held at 1% per year until the total economic potential is reached (13%) as identified in the Company's market potential study for energy efficiency. Over the next ten years, both energy efficiency targets are very similar with the SB 221 target of 22% surpassing the Economic Potential Case of 13% after the initial ten year period.

Using these four distinct future planning environments as a basis, diverse resource portfolios were developed based on the SO analyses that could address these future environments. The types, amounts, and timing of the resources selected by SO to meet these futures formed the basis for seven distinct resource plans or portfolios to be further evaluated with the PAR model for detailed production costing analysis. The seven resource portfolios that were evaluated included:

1. Peaking Resources and 400 MWs of Advanced Nuclear
2. Peaking and Intermediate Resources and 400 MW of Advanced Nuclear
3. Peaking Resources and 1600 MWs of Advanced Nuclear

4. Peaking Resources and 800 MWs of Advanced Nuclear
5. Peaking Resources and 545 MWs of Sequestered Integrated Gassification Combined Cycle
6. Peaking and Intermediate Resources and Renewable Resources above SB 221 requirements
7. Peaking Resources and Renewable Resources above SB 221 requirements

See Table 4.14 below.

Table 4.14 Resource Portfolio Alternatives

	CT & CC PPAs*	AER Compliance	RPS Renewables**
Port1: CT PPAs & 400 MW Nuke AER	CT PPAs: 1000 MW - 1600 MW	400 MW 2024	New Build Solar: 28 MW; New Build Wind: 400 MW; Solar & Wind RECs as needed
Port2: CT & CC PPAs & 400 MW Nuke AER	CT PPAs: 650 MW - 1200 MW CC PPAs: 400-500 MW	400 MW 2024	New Build Solar: 28 MW; New Build Wind: 400 MW; Solar & Wind RECs as needed
Port3: CT PPAs & 1600 MW Nuke AER	CT PPAs: 0 MW - 1600 MW	1600 MW in 2024	New Build Solar: 28 MW; New Build Wind: 400 MW; Solar & Wind RECs as needed
Port4: CT PPAs & 800 Nuke AER	CT PPAs: 750 - MW - 1600 MW	800 MW in 2024	New Build Solar: 28 MW; New Build Wind: 400 MW; Solar & Wind RECs as needed
Port5: CT PPAs & 630 MW IGCC (Seq) AER	CT PPAs: 1000 MW - 1600 MW	545 MW (90% CCS) in 2023	New Build Solar: 28 MW; New Build Wind: 400 MW; Solar & Wind RECs as needed
Port6: CT & CC PPAs Renewable AER	CT PPAs: 500 MW - 1050 MW CC PPAs: 400-500 MW	New Build Wind: 650 MW ; 100 MW Biomass	New Build Solar: 28 MW; New Build Wind: 400 MW; Solar & Wind RECs as needed
Port7: CT PPAs & Renewable AER	CT PPAs: 900 MW - 1500 MW	New Build Wind: 650 MW ; 100 MW Biomass	New Build Solar: 28 MW; New Build Wind: 400 MW; Solar & Wind RECs as needed

*2009-2030 in 50 MW Blocks

**.5% Solar & 12% Wind; 50% RECs/50% New Build by 2025; 1 Year REC Contracts

***12.5% Wind New Build from 2016-2024

M. RESOURCE PORTFOLIO ALTERNATIVE EVALUATION RESULTS

After the development of the alternative resource portfolios in SO, the PAR model was used to perform detailed production costing analysis on the seven portfolios in the different future planning environments explained above (High/Low Carbon Legislation and SB 221/ Economic Potential Energy Efficiency). All scenarios include compliance with SB 221 AER requirements. The results of the detailed analysis showed the following:

OPTIMIZED PLAN RESULTS

Low Carbon	Low Carbon	High Carbon	High Carbon
Economic Potential EE	SB 221 EE	Economic Potential EE	SB 221 EE
CT & 400 MW Nuclear	**CT & 400 MW Nuclear**	**CT & 800 MW Nuclear**	**CT & 800 MW Nuclear**

*CT represents peaking resources such as Combustion Turbine (CT) capacity and MISO/PJM annual capacity purchases.

The detailed production costing analysis indicated that the optimal plan for Ohio consists of peaking capacity over the next ten years. Peaking capacity resource options include the MISO/PJM capacity markets and short term purchase power agreements in the near term. Over a longer term, peaking resources could also include building of or purchasing power from peaking assets (such as combustion turbines) at the appropriate time taking into consideration, construction lead times, customer switching and prevailing market prices. Duke Energy will regularly assess it future near-term resource needs and make decisions on MISO/PJM capacity purchases, short-term PPAs or new build options in line with the strategic direction selected in the Plan.

The resource planning process also identified the potential value of new nuclear resource options over the longer term to meet the specific SB 221 advanced energy resources required by 2025 in a carbon constrained environment. Costs associated with CO_2 emissions related to carbon legislation or regulations, along with differing levels of energy efficiency achievement, support new advanced nuclear capacity options ranging from 400 MWs to as much as 800 MWs. Specific detailed plans for a long-range nuclear option will be highly dependent upon future national and state energy policy, including carbon legislation, and continued progress in advanced nuclear design, as well as construction costs. Additionally, commitments to capital intensive projects such as new nuclear resources will be highly dependent upon legislative and regulatory actions supporting cost recovery.

Additional sensitivity analyses varying coal and gas prices above and below the base fundamental fuel price levels were evaluated in SO and PAR to consider the cost effectiveness of alternative resource portfolios across different planning environments. Specific sensitivity analysis included high fuel costs (+50% over fundamental coal prices, +30% gas prices) and low fuel costs (-25% coal prices, -25% gas prices). The results of this analysis were consistent with the base fuel price cases identifying peaking resources with options for nuclear ranging from 400 MWs to 1600 MWs to be the optimal resource portfolios.

PUCO Form FE-R6:
Electric Utility's Actual and Forecast Ohio Peak Load and Resources
Dedicated to Meet Electric Utility's Ohio Peak Load
(Megawatts)
Summer Season

						2010	2011	2012
	-5	-4	-3	-2	-1	0	1	2
Net Demonstrated Capability	3961	3961	3906	3906	3906	3894	3894	3894
Net Seasonal Capability	3961	3961	3906	3906	3906	3894	3894	3894
Purchases	1152	1050	1058	1064	979	758		1050
Sales					369	1035		
Renewables[d]							0.38	1.52
Available Capability[a]	5113	5011	4964	4970	4516	3617	3894	4946
Native Load	4455	4128	4049	3845	3358	2251	2727	4323
Demand Side Management (DSM)						7	20	56
Available Reserve[e]	658	883	915	1125	1158	1373	1151	507
Internal Load[b]	4455	4128	4049	3845	3358	2251	2764	4495
Reserve[f]	658	883	915	1125	1158	1373	1187	679

	2013	2014	2015	2016	2017	2018	2019	2020
	3	4	5	6	7	8	9	10
Net Demonstrated Capability	3894	3894	3578	3578	3578	3578	3578	3578
Net Seasonal Capability	3894	3894	3578	3578	3578	3578	3578	3578
Purchases	1050	1000	1250	1200	1150	1150	1100	1000
Sales								
Renewables[d]	2.66	10.3	17.94	25.58	33.22	40.86	48.5	55
Available Capability[a]	4947	4904	4846	4804	4761	4769	4727	4633
Native Load	4328	4330	4301	4306	4307	4317	4319	4328
Demand Side Management (DSM)	82	103	123	146	172	194	214	237
Available Reserve[e]	524	500	491	467	449	469	445	365
Internal Load[b]	4505	4507	4478	4483	4484	4494	4496	4505
Reserve[f]	701	677	668	644	626	646	622	542

a. Available Capability is equal to Net Seasonal Capability plus Purchases minus Sales plus Renewables.
b. Internal Load equals Native Load plus Interruptible Load.
c. Interruptible Load includes Powershare and Powermanager.
d. Renewable Capacity on Summer Peak.
e. Available Reserve is equal to Available Capability minus Internal Load plus DSM.
f. Reserve is equal to Available Capability minus Native Load plus DSM.
g. Load forecast assumes wires-connected customers from 2012 forward.

PUCO Form FE-R8:
Electric Utility's Actual and Forecast Ohio Peak Load and Resources
Dedicated to Meet Electric Utility's Ohio Peak Load
(Megawatts)
Winter Season

						2010	2011	2012
	-5	-4	-3	-2	-1	0	1	2
Net Demonstrated Capability	4080	4080	4025	4025	4025	4013	4013	4013
Net Seasonal Capability	4080	4080	4025	4025	4025	4013	4013	4013
Purchases	50	0	625	577	700			1050
Sales								
Renewables[d]							0.38	1.52
Available Capability[a]	4130	4080	4650	4602	4725	4013	4013	5065
Native Load	3609	3162	3691	3651	3651	2063	3480	3469
Demand Side Management (DSM)						12	42	66
Available Reserve[e]	608	557	1126	1077	1199	1950	533	1596
Internal Load[b]	3522	3523	3524	3525	3526	2075	3522	3535
Reserve[f]	521	918	959	951	1074	1962	575	1662

	2013	2014	2015	2016	2017	2018	2019	2020
	3	4	5	6	7	8	9	10
Net Demonstrated Capability	4013	4013	3697	3697	3697	3697	3697	3697
Net Seasonal Capability	4013	4013	3697	3697	3697	3697	3697	3697
Purchases	1050	1000	1250	1200	1150	1150	1100	1000
Sales								
Renewables[d]	2.66	10.3	17.94	25.58	33.22	40.86	48.5	55
Available Capability[a]	5066	5023	4965	4923	4880	4888	4846	4752
Native Load	3456	3441	3418	3401	3367	3358	3344	3333
Demand Side Management (DSM)	93	109	127	148	184	200	219	237
Available Reserve[e]	1610	1582	1547	1522	1513	1530	1502	1419
Internal Load[b]	3549	3550	3545	3549	3551	3558	3563	3570
Reserve[f]	1703	1691	1674	1670	1697	1730	1721	1656

a. Available Capability is equal to Net Seasonal Capability plus Purchases minus Sales plus Renewables.
b. Internal Load equals Native Load plus Interruptible Load.
c. Interruptible Load includes Powershare and Powermanager.
d. Renewable Capacity on Summer Peak.
e. Available Reserve is equal to Available Capability minus Internal Load plus DSM.
f. Reserve is equal to Available Capability minus Native Load plus DSM.
g. Load forecast assumes wires-connected customers from 2012 forward.

Plans for facilities listed on this Form are entirely speculative and consequently should not be regarded as "planned" electric generation facilities. The Company continues to monitor markets and evaluate options as appropriate.

PUCO Form FE-R10:
Specifications of Planned Electric Generation Facilities

1. Facility Name	Solar 2011
2. Facility Location	TBD
3. Facility Type	Photovoltaic
4. Anticipated Capability	1 MW
5. Anticipated Capital Cost	[redacted] [redacted]
6. Application Timing	
7. Construction timing	
8. Planned Pollution Control Measures	N/A
9. Fuel	Sun
10. Miscellaneous	

1. Facility Name	Solar 2012 - Solar 2019 (1 plant added per year)
2. Facility Location	TBD
3. Facility Type	Photovoltaic
4. Anticipated Capability	3 MW (per plant)
5. Anticipated Capital Cost	[redacted] [redacted]
6. Application Timing	
7. Construction timing	
8. Planned Pollution Control Measures	N/A
9. Fuel	Sun
10. Miscellaneous	

1. Facility Name	Wind 2014 - Wind 2021 (1 plant added per year)
2. Facility Location	TBD
3. Facility Type	Wind
4. Anticipated Capability	50 MW (per plant)
5. Anticipated Capital Cost	[redacted] [redacted]
6. Application Timing	
7. Construction timing	
8. Planned Pollution Control Measures	N/A
9. Fuel	Wind
10. Miscellaneous	

1. Facility Name	Nuclear 2024
2. Facility Location	TBD
3. Facility Type	Nuclear
4. Anticipated Capability	400 MW
5. Anticipated Capital Cost	[redacted] [redacted]
6. Application Timing	
7. Construction timing	
8. Planned Pollution Control Measures	N/A
9. Fuel	Uranium
10. Miscellaneous	