



Public Service Company of Colorado

Senate Bill 100 Plans & Lamar Transmission CPCN

**CCPG Meeting
April 27, 2011**

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Senate Bill 07-100

Senate Bill 100 requires

- ✓ Designate “Energy Resource Zones”
- ✓ Develop plans for expansion of transmission for delivering power from beneficial energy resource in or near such zones
- ✓ Submit proposed projects for CPCN
- ✓ File every other year in October – Next filing in 2011



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Senate Bill 100 projects

Item	Project	Generation (MW)	In Service Date*	Project Status
1.	Missile Site 230kV Switching Station	250	In service	Project completed. 250 MW wind project to be interconnected 2011
2.	Midway-Waterton 345kV Transmission Project		June 2011	Modification of CPCN filed on April 20, 2009, and approved May 2009
3.	Pawnee-Smoky Hill 345kV Transmission project	500	2013	CPCN approved by the CPUC on Feb. 27, 2009
4.	San Luis Valley-Calumet-Comanche 345kV Transmission Project	750 - 1400	-	ALJ Recommended decision on CPCN Dec 2011 and PUC order on the exceptions March 2011.
5.	Missile Site 345kV Switching Station		2013	Supplemental filing in September 2009. CPCN issued June 2010
6.	Lamar-Front Range 345kV •Lamar-Comanche •Lamar-Missile Site	2000 MW	2018-2019	CPCN planned to be filed 3 rd Quarter 2011*
7.	Lamar-Vilas 230/345kV transmission Project		2018-2019	CPCN planned to be filed 3 rd Quarter 2011*
8.	Ault-Cherokee 230kV Transmission Project	300 - 600	-	TBD*
9.	Pawnee-Daniels Park 345kV Transmission Project	300 - 500	-	TBD*

*Project status and dates subject to change

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Missile Site 230 kV

Sponsor	PSCo
Description	The project consisted of constructing a new 230 kV substation to intersect the Pawnee – Daniels Park 230 kV transmission line.
Purpose	The project was implemented to allow approximately 250 MW of resource injection in Energy Resource Zone (ERZ) 2.
Schedule	11/31/2010

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Midway - Waterton 345 kV Transmission Project

Sponsor	PSCo
Description	82 miles of 345 kV transmission line between the Midway Substation, near Colorado Springs and the Waterton Substation, southwest of the Denver metro area
Purpose	Proposed in accordance with Senate Bill 07-100 to facilitate potential generation resources in Energy Resource Zones 3, 4 and 5. Alleviates potential overloads on the Colorado Springs Utilities network
Schedule	June 2011



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Pawnee - Smoky Hill 345 kV Transmission Project

Sponsor	PSCo
Description	This project consists of constructing a new 95 mile 345kV transmission line from the Pawnee Substation, through Missile Site Substation, to Smoky Hill Substation and associated 345kV substation expansions
Purpose	The project is proposed in accordance with Senate Bill 07-100 to develop renewable energy resources in Energy Resource Zones (ERZ) 1 and 2 while improving system reliability. This project is expected to accommodate approximately several hundred MW of resources from ERZ 1 and ERZ 2.
Schedule	1/31/2013



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Missile Site 345 kV

Sponsor	PSCo
Description	The project consists of constructing a new 345 kV yard at the existing Missile Site Substation that would intersect the planned Pawnee – Smoky Hill 345 kV transmission line. The new 345 kV yard will connect with the existing 230 kV yard through a single 345/230 kV 560 MVA autotransformer
Purpose	The project is proposed in accordance with SB07-100 as an injection point for potential energy resources in Energy Resource Zone (ERZ) 2.
Schedule	1/31/2013



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San Luis Valley – Calumet – Comanche Transmission Project

Sponsor	PSCo
Description	New, double-circuit 230 kV transmission line from the San Luis Valley Substation to a new Calumet Substation, near Walsenburg, Colorado. New double-circuit 345 kV transmission from Calumet to the Comanche Substation.
Purpose	SB100 project to facilitate generation resources in ERZ's 4 and 5 Project also improves system reliability to PSCo and Tri-State customers. This project can accommodate 750-1400 MW of resources in the San Luis Valley (ERZ4) and the Walsneburg/Comanche area (ERZ5)
Schedule	2016



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Lamar – Front Range Transmission Project

Sponsor	PSCo, TSGT
Description	<p>This project consists of two primary 345kV components.</p> <ol style="list-style-type: none"> 1. Lamar – Comanche: approximately 125 miles 2. Lamar/Energy Center – Burlington – Big Sandy – Missile Site <p>Project can accommodate 2000 MW of new generation in eastern and southeastern Colorado.</p> <p>Project also improves reliability to customers and for generation resources in the Lamar area</p>
Purpose	<ol style="list-style-type: none"> 1. SB100 project to accommodate generation in ERZ's 2 and 3 2. Accommodate Tri-State resource plans near Lamar 3. Increase reliability to Lamar area loads and resources
Schedule	2018 – 2019



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Lamar-Vilas 345 kV Transmission Project

Sponsor	PSCo, Tri-State
Description	<p>Construct apx. 60 miles of new 230kV or 345kV transmission from Lamar substation to Vilas substation. Joint project with participation from PSCo & Tri-State. Project may be built single-circuit, double-circuit capable, or higher-voltage capable.</p>
Purpose	<ol style="list-style-type: none"> 1. SB100 project to accommodate generation in GDA 6 2. Provide redundant service to Vilas area loads
Schedule	2018 – 2019



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Ault – Cherokee 230 kV Transmission Project

Sponsor	PSCo
Description	Construct a new 85-mile 230kV transmission line from the Ault Substation to Cherokee Substation. This will consist of a single 59-mile line from Ault to just outside of Ft. Lupton. From this point the line will become a 26-mile double circuit line by rebuilding the existing 115kV line from Ft. Lupton to Cherokee, where one side will remain in operation at 115kV and the other side will be operated at 230kV, completing the Ault-Cherokee 230kV circuit
Purpose	SB100 project to accommodate several hundred MW of generation in ERZ1
Schedule	TBD



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Pawnee – Daniels Park 345 kV Transmission Project

Sponsor	PSCo
Description	The Pawnee – Daniels Park 345 kV Transmission Project consists of building 345 kV transmission from the Pawnee Substation, north of the Denver-metro area, to the Daniels Park Substation, south of the Denver-metro area. The project will also result in a new Smoky Hill – Daniels Park 345 kV line
Purpose	SB100 project to facilitate potential generation resources in ERZ's 1 and 2. This project could accommodate several hundred MW of resources interconnecting at or near Pawnee and/or Missile Site Substation Project also would improve system reliability.
Schedule	TBD



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Lamar Transmission Projects

Zinn Photography/Courtesy of the Edison

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Lamar - Front Range Scope

➤ Purpose:

1. Improve reliability in SE Colorado
2. Resource Needs for Tri-State
3. SB100 project for PSCo: Alleviates constraints from ERZ's 2, 3, & 4

➤ Process

- Studies kicked off May 2010
- Meetings 1-2 times/month
- 30 participants

➤ Methodology

- Several alternatives
- Powerflow, Transient Stability
- Peak and Off-peak models



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LFR Sensitivities

- **Single/Double 345 kV**
- **“GDA5” Substation 20 miles south of Burlington**
- **Boone 345/230 kV Transformer**
- **Increase Comanche #3 and BH Generation**
- **Interconnection with Gladstone**
- **Vilas Transmission**
- **Peak / Off-Peak Loads**



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SB100 Schedule

- **Lamar – Front Range & Lamar – Vilas CPCN**
 - **Finish Studies**
 - **Technical Report**
 - **Ownership / Participation Agreements**
 - **Stakeholder Outreach**
 - **File CPCN October 2011**

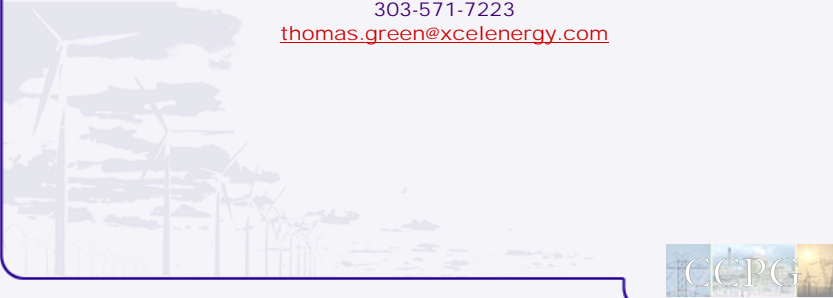
- **SB100 Filing**
 - **Draft Report**
 - **Finish Report**
 - **File October 2011**



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SB100 Questions

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