

Chugach Electric Association

**2009-2013
Capital Improvement
Program**

October 23, 2008

Total Capital Improvement Program

5 -year capital expenditure plan to maintain, improve and/or expand Chugach's generation, transmission & distribution system

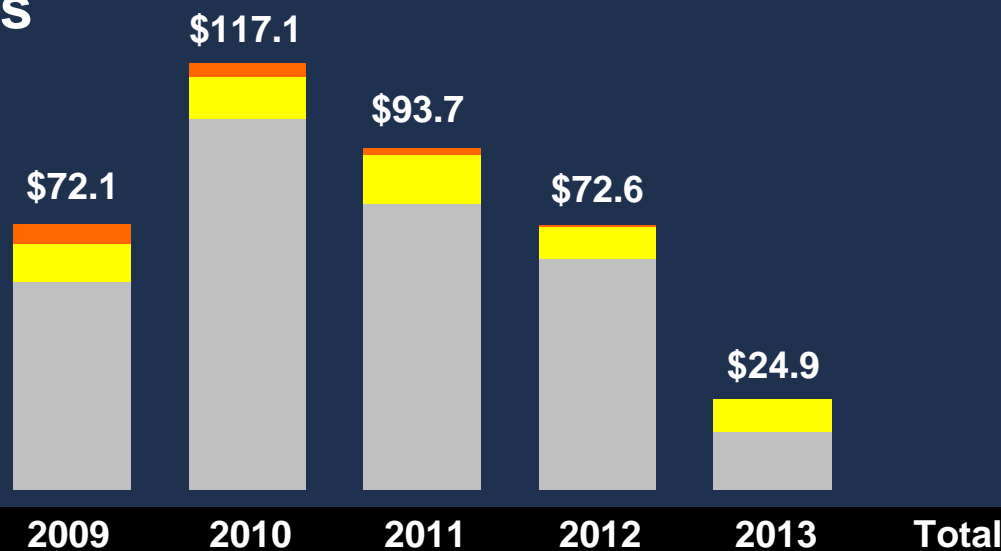
- **First year is the 2009 budget (net of reimbursable amounts and inventory)**
- **2010-2013 represents planning estimates that do not include escalation or financing costs**




Overall

- **Consistent with long-term resource plans**
- **Designed to meet and/or maintain Chugach's reliability targets**
- **Justified based on regulatory, safety, and reliability requirements and/or economic value.**

Total CIP by Function - \$ in millions

(individual years do not add to totals due to rounding)



	2009	2010	2011	2012	2013	Total
 Telecom, SCADA & Other ⁽¹⁾	5.3	4.0	1.5	0.4	0.1	11.3
 Distribution ⁽²⁾	10.7	11.1	14.0	8.8	9.1	53.6
 Generation & Transmission ^(3,4)	56.2	101.9	78.2	63.4	15.7	315.4
Total:	\$72.1	\$117.1	\$93.7	\$72.6	\$24.9	\$380.4

1. Includes telecommunications, SCADA, general plant and deferred debits
2. Includes distribution and distribution substation
3. Includes generation, transmission and sub-transmission
4. Includes \$242 million for new generation

Total CIP

by Function - \$ in millions

	Total	Targets
Telecom, SCADA & Other ⁽¹⁾	11.3	9.0
Distribution ⁽²⁾	53.6	58.0
Generation & Transmission ⁽³⁾	73.0	78.0
Total:	\$138.0	\$145.0
New Generation (183 MW) ⁽⁴⁾	242.4	
Total with new generation	\$380.4	

1. Includes telecommunications, SCADA, general plant and deferred debits
2. Includes distribution and distribution substation
3. Includes generation, transmission and sub-transmission
4. Chugach's portion of the South Central Alaska Power Plant

Generation Projects



Generation Projects by Type - \$ in millions

(individual years do not add to totals due to rounding)



New Generation

- **Planning cost estimate of approximately \$242 million (nominal) over a 4-year period**
 - Internal analysis based on manufacturer supplied data
 - Subject to changes in market-driven input pricing
- **2009 CIP budget is \$42.8 million for:**
 - Gas turbine purchase
 - Steam turbine purchase
 - Land purchase
 - Preliminary engineering
 - Permitting

Other Generation Projects

\$ in millions

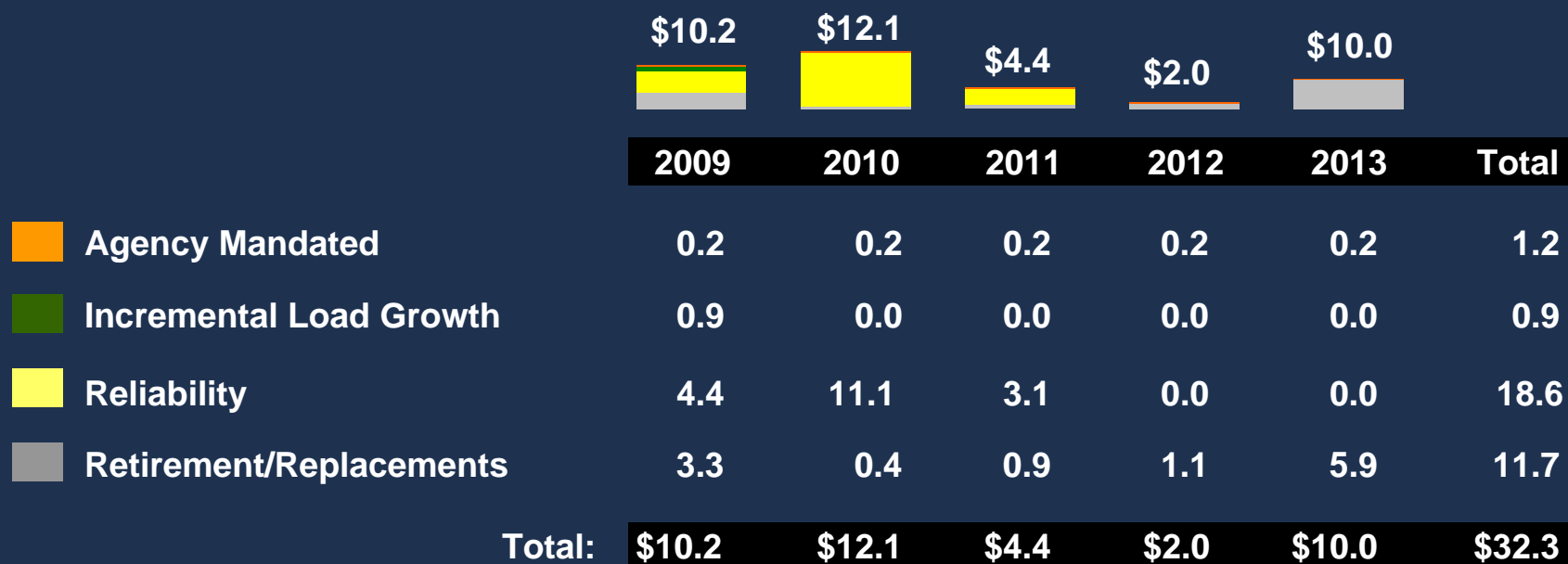
- Major projects in 2009
 - Cooper Lake Power Plant relicense projects (Stetson Creek diversion) – \$1.0
 - Beluga station service relay upgrade - \$0.5

Transmission & Sub-transmission Projects



Transmission & Sub-transmission Projects by Type - \$ in millions

(individual years do not add to totals due to rounding)



Transmission Projects

\$ in millions

- Briggs switchyard (Eklutna Project) - \$1.3
- New 138 kV transmission line, Retherford Substation to O'Malley - \$2.7
- Pt. MacKenzie station service - \$0.5
- APA Substation improvements - \$0.6
- Teeland relay control upgrade - \$0.6
- Eklutna 115 kV express tie-in - \$0.7
- 138 kV yard at IGT - \$15.5 (2009-11)

Sub-transmission Projects

\$ in millions







- Retherford cap bank switches - \$0.4
- 34.5 kV underground, Retherford Substation to O'Malley junction - \$0.5
- 34.5 kV underground, New Seward to O'Malley junction - \$0.5

Distribution & Distribution Substation Projects



Distribution & Distribution Substation Projects by Type - \$ in millions

(individual years do not add to totals due to rounding)

	\$10.7	\$11.1	\$14.0	\$8.8	\$9.1	
	2009	2010	2011	2012	2013	Total
 Agency Mandated	0.2	0.1	0.1	0.1	0.1	0.7
 Reliability/Efficiency	0.3	0.3	0.3	0.3	0.3	1.4
 Safety	0.2	0.2	0.1	0.1	0.1	0.6
 Retirements/Replacements	3.3	3.4	2.7	2.5	2.5	14.4
 Incremental Load Growth	1.1	1.6	5.5	0.5	1.0	9.7
 Services to New Customers	5.6	5.5	5.4	5.3	5.2	26.8
Total*	\$10.7	\$11.1	\$14.0	\$8.8	\$9.1	\$53.6

Distribution Projects

\$ in millions

- Annually recurring projects: basic services to customers, reimbursable projects and cable replacements/rehabilitation, street light conductor replacements, primary circuit loop closures and code corrections - ~\$7.0/year
- Hope feeder upgrade – \$0.1

Basic Services to Customers

(net of reimbursable amounts)

Chugach is required to provide basic service.
This costs just over \$5 million per year.

	2009	2010	2011	2012	2013	Total
Meters	0.3	0.3	0.3	0.3	0.3	1.6
Overhead Line Extensions	0.1	0.1	0.1	0.1	0.1	0.6
▶ Underground Line Extensions	2.1	2.0	1.9	1.8	1.7	9.6
▶ Operations Service Connections	3.0	3.0	3.0	3.0	3.0	15.0
Total:	\$5.6	\$5.5	\$5.4	\$5.3	\$5.2	\$26.8

Reimbursable Relocate Projects

- Chugach is reimbursed an average of 90% of the project cost for agency requested relocations.
- Chugach share of cost is \$0.2 million.
- 2009 projects include:
 - Along the Old Seward Highway, Brandon to O'Malley
 - Lake Otis & Tudor intersection
 - Victor Road
 - East Dowling Road
 - 48th Avenue extension

Cable Replacement & Rehabilitation Projects

- Cable Replacement is an on-going project to replace underground distribution cable.
 - Projects in 2009 include the subdivisions of Century Village, Kensington and Chugach Foothills.
- Cable Rehabilitation is a method used to restore older cable for reliable use and guarantees 15 years of additional life.
 - Projects in 2009 include Chugach Meadows, Campbell Lake Heights, Woodland Lakes, Atelier, Queensgate, South Mountain Meadows and Spring Hill Estates.

Distribution Substations










\$ in millions

- **Abbott Loop substation**
 - 2009-2011 cost - \$7.0
 - Substations presently serving this area (Sand Lake, Dowling, Klatt and O'Malley) are approaching capacity.
 - Loads in this area are currently too large to be fed by adjacent substations in the event of an outage.
- **Boniface substation upgrade**
 - 2009 cost - \$0.6
 - Replacement of controls enclosure
- **Girdwood substation upgrade**
 - 2009-10 cost – \$2.4
 - Replacement of breakers

Other Projects

Other Projects by Type - \$ in millions

(individual years do not add to totals due to rounding)

	\$5.3 	\$4.0 	\$1.5 	\$0.4 	\$0.1 	
	2009	10	2011	2012	2013	Total
 Deferred Debits	2.1	0.2	0.0	0.0	0.0	2.2
 General Plant	1.2	2.8	0.9	0.0	0.0	4.9
 SCADA	1.0	0.4	0.0	0.0	0.0	1.4
 Telecommunications	1.0	0.6	0.6	0.4	0.1	2.8
Total:	\$5.3	\$4.0	\$1.5	\$0.4	\$0.1	\$11.3

Telecommunications, General Plant & Deferred Debit Projects

- 2009 telecommunications projects include:
 - Microwave business enhancement, Bird communication site building replacement, Cooper Lake dam monitoring, APA-UVSS 115 kV protection and Turnagain Arm communication improvement.
- 2009 general plant projects include:
 - Emergency generators and fuel tank replacement, HVAC controls replacement at headquarters, operations work management and design automation.
- 2009 deferred debit projects include:
 - Gas negotiations, transmission station service capacity review study, ConocoPhillips compressor project and labor negotiations.

SCADA Projects

- **The SCADA project is for the SCADA/EMS Master Station Migration**
 - **This project will migrate the existing Chugach SCADA/EMS computer system infrastructure from the current system**
 - **No vendor support for current system results in no ongoing security updates and increasing cost for specialized support to maintain existing system**
 - **The system provides for all monitoring and control of Chugach transmission, generation and distribution system assets**
 - **The project includes a backup control system located off-site**
 - **The 2009 budget is \$1.0 million and another \$0.4 million to complete project in 2010**

2009 – 2013 CIP Major Project Summary

- New generation
- New 138 kV yard at IGT
- New distribution substation (Abbott Loop)
- New SCADA system
- CIS replacement (2010-11)
- Huffman Loop – 34.5 kV Feeder to Retherford
- Quartz Creek 115 kV transmission line rebuild (2012-13)
- Cooper Lake relicense projects

Discussion