Volt-VAR Control survey in United States and Canada

Volt-VAR Control Task Force
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Introduction

- Survey objectives:
  - Determine underlying objectives and economic justification for VVC projects
  - Identify different technologies used to accomplish VVC objectives
  - Determine status of utilities VVC projects (planned, completed, etc.)
  - Identify benefits accomplished by completed projects and benefits expected form planned projects.
- How survey was conducted:
  - Contacted 14 electricity distribution utilities by telephone (12 in USA and 2 in Canada)
  - Survey timeframe: December 2009 to January 2010

VVC Objectives

Primary reason for implementing VVC :

- Regulator requirement (3)
- Energy reduction (7)
- Smart Grid technology evaluation (2)
- Peak demand reduction (2)

VVC Projects

Distributors	Project planning for Volt and Var control				
	Volt control demonstration project	Volt control deployment	Var control demonstration project	Volt and Var control demonstration project	Volt and Var control deployment
A	2002-2006	2010-	2010		
B	1996-2004	2004-2010			
C	2001-2007			2010-	
D (1)		1971-1972			
E	2009-2011			2010-	
F (1)				197?-197?	2010-
G	1997-1998	1999-2000			2010-2013

(1) Predominantly demand reduction project

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VVC Projects (cont)

Distributors	Project planning for Volt and Var control				
	Volt control demonstration project	Volt control deployment	Var control demonstration project	Volt and Var control demonstration project	Volt and Var control deployment
H	2006				
I (1)	2005-2007			2009	
J		197?-197?		2010	
K (1) and (2)					2004-2008 (2)
L	1983-2007			2010	
M				1987-1992	1992-2001 (3)
N				1991-1995	2009-

(1) Predominantly demand reduction project
(2) Only one distribution line in the project
(3) Vars are not controlled in real time

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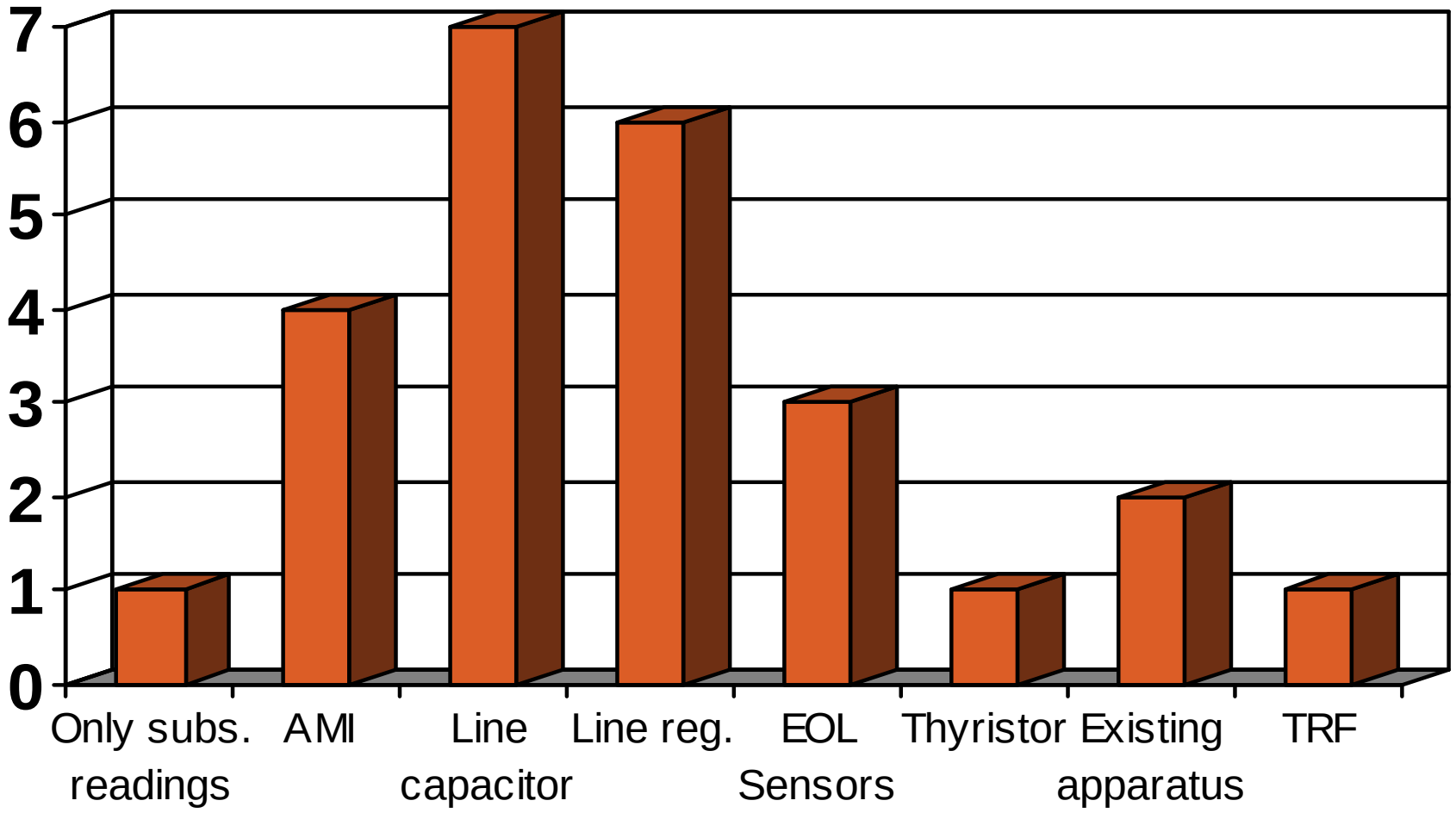
Sources of information for VVC



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Project gains

Utility	CVR Factor	Volt reduction	Demand reduction
A	0.5 – 1.5	2.5% – 2.1%	0.6% per volt
B	0.5 – 1.5	0.8% – 1.3%	1% per volt
C	0.7 – 2.5	2% - 3%	n.d.
D	n.d.	6% - 10.3%	n.d.
E	n.d.	1.89%	n.d.
F	1.59 – 1.91	2.5%	n.d.
G	n.d.	1.7% - 2.5%	n.d.

Project gains (cont)

Utility	CVR Factor	Volt reduction	Demand reduction
H	n.d.	2.0% - 3.5%	1% - 2%
I	n.d.	n.d.	n.d.
J	n.d.	n.d.	2.87%
K	n.d.	2.0% - 2.1%	n.d.
L	n.d.	n.d.	n.d.
M	0.65 – 0.72	2.0% - 3.0%	2.0 – 4.0%
N	n.d.	n.d.	n.d.

- **Questions?**