

# CYBERSECURITY IN THE UTILITY SECTOR

NARUC Committee on Critical Infrastructure

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# INTRODUCTION

- Cybersecurity risk presents an emerging credible threat.
- Smart Grid shows new challenges in standards and practices.
- Cost benefit and gap analyses have not been adequate.
- Collaboration is vital to success in the utility sector.

# NATIONAL SECURITY

Nation-States	Terrorism	Organized Crime
CIA / DoD / NSA	DHS / FBI	DHS / FBI
Information Sharing / Intelligence / Jurisdiction / Privacy / Funding		
China, Russia, Iran, North Korea, Malaysia?!	al-Qaeda, “home-grown”, eco-terrorists, lone gunmen	syndicates, identity thieves, spammers, saboteurs
<b>CREDIBLE THREAT</b>		

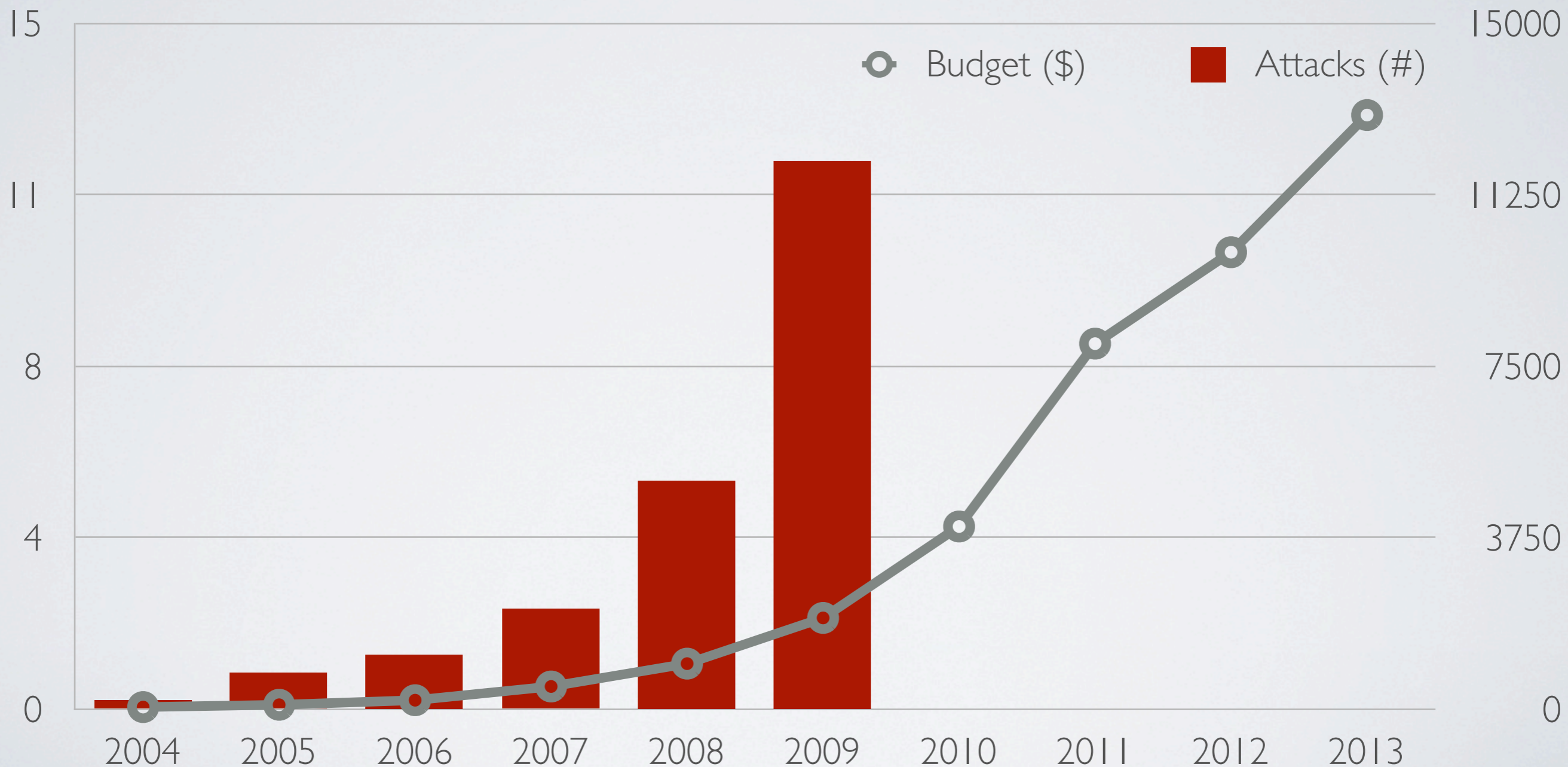
# INDUSTRIAL SECURITY

National	States	Regional	Industry
FERC / NERC	PUCs / EMAs	ISOs & Interconnects	Utilities
Information Sharing / Intelligence / Jurisdiction / Privacy / Funding			
Wide Area Situational Awareness & Emergency Control (Fed. Powers Act)	Tariff setting, CI/KR asset tracking, secure disclosure, CBA & gap analyses	Disaster recovery, reliability, info security	Implementation, Operations, Delivery
<b>CREDIBLE THREAT</b>			

# CREDIBLE THREAT EXEMPLARS

- Cable MSOs (Cable Theft, Piracy, Sabotage) ~ 11% revenues
- Telecommunications (Toll fraud, Phreaking, Sabotage) \$1.3 B
- Financial Sector (Code theft, identity theft) \$6B
- Utility Sector (Extortion, Meter tampering, CI/KR threat) ?
- Smart Grid costs to secure are undefined at present.

# US DOD CYBERSECURITY SPENDING



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# ANECDOTES

- DoD purchased routers from Cisco, but due to supply chain assurance issues, were issued counterfeits from China - were installed in SAP level systems.
- Goldman Sachs has source operating code for trading systems stolen and stored on German file servers - yet to be secured.
- AT&T had multiple fiber cuts in 2009, in one case disrupting 911 and ATM networks for up to 36 hours in SF Bay area - \$500K reward for info.
- Joint Strike Fighter, F-22, Marine helicopter, Afghan base designs in perimeter defense all illicitly distributed by unauthorized use of file sharing programs.
- Aurora is still a problem. Per DHS

# SOLUTIONS

- We need continuous cybersecurity improvement processes adopted by industry-led collaboration.
- We need consensus-based standards developed by mutually recognized and respected standards bodies (NAESB, EEI et. al.)
- We need the utility industry to drive implementation of cybersecurity initiatives.
- We need commissioners to become educated on the costs and risks in failure to implement security solutions.
- We need to understand what our investments in Smart Grid require in commitments for us over the next decade.

QUESTIONS / COMMENTS?

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