

Institutional Pressures on Energy Efficiency in Ontario Hospitals

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Energy Use in Hospitals

- 30-40% of all primary energy use is in buildings (UNEP, 2007)
- Hospitals account for a proportionally higher amount as
 - operate around the clock
 - have extra requirements for clean air, disease control, imaging equipment and waste management (Kolokotsa et al., 2012).

Latent Savings in Ontario Hospitals

Potential savings identified through:

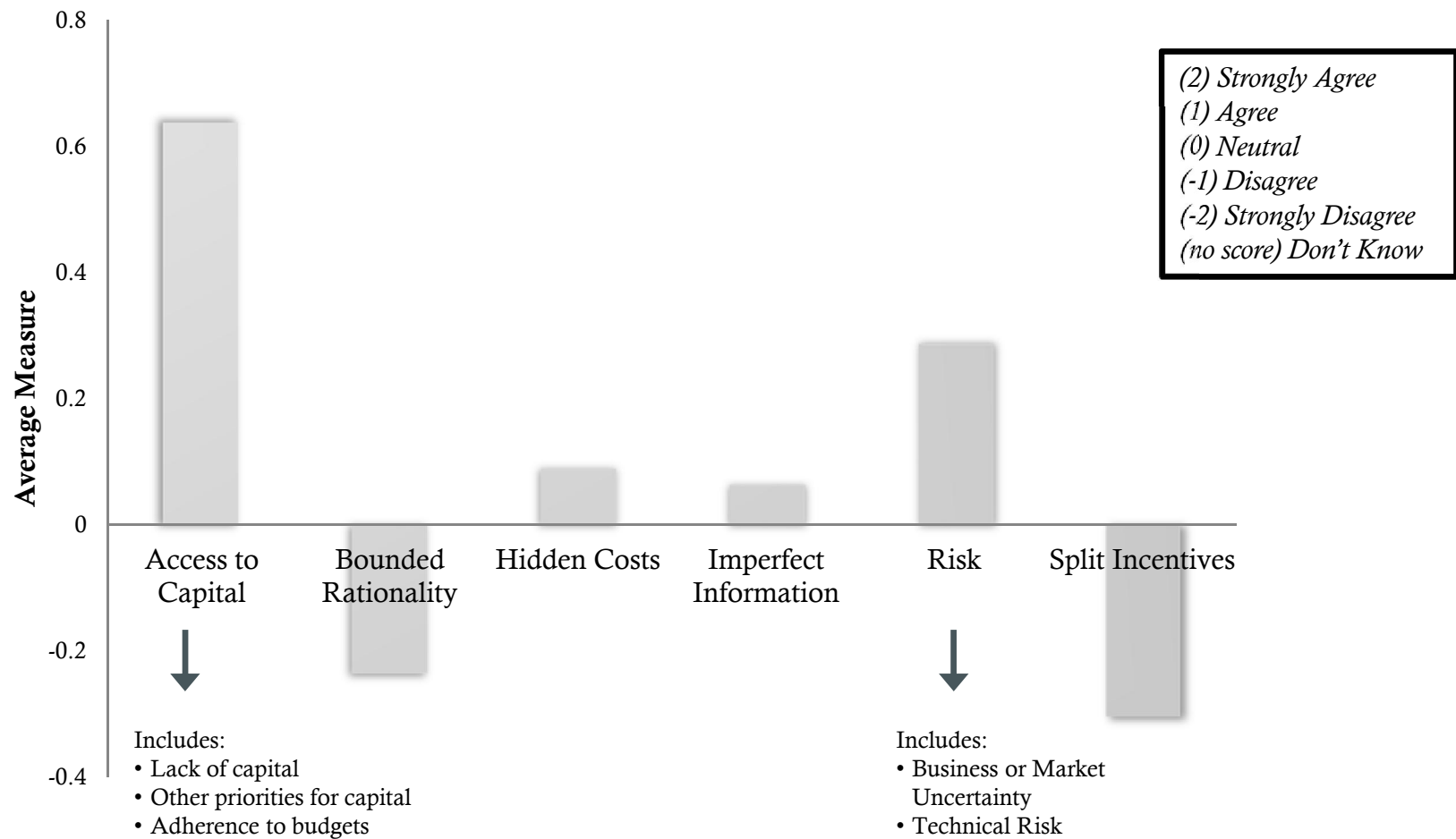
- A technical assistance program run by a non-profit, CCGHC
- Energy Audits coordinated by a major non-profit hospital association (OHA)
- Conservation and Demand Management (CDM) plans required in 2014 by regulation for MUSH sector

Over 1,000 energy efficiency projects identified in 157 hospitals:

- \$250 million cost to implement
- Annual cost savings of \$38 million dollars (6.5 year payback)
- Reduce electricity use by about 1 PJ per year
- Enough to run the City of Calgary for about a month

What are the barriers?

Survey Results



Theoretical Framework:

Institutional Theory

- Institutions influence behaviour as individuals and organizations strive for legitimacy, or desirable, proper or appropriate actions within some socially constructed system of norms, values, beliefs and definitions. (Suchman, 1995; Scott, 2010)
- DiMaggio and Powell (1983) contend these rules, norms and beliefs constrain actors behaviour and cause organizations to become more similar, and in times of uncertainty, model themselves on other organizations.

“Behaviour are so vast and manifold that ... simplistic approaches almost invariably fail. It is imperative to uncover the context-specific factors (from infrastructure, capital constraints, values, attitudes, norms, culture, tradition, climate, geography, education, political system, legislature, etc) that influence human behaviour, and design Demand Side Management (DSM) interventions accordingly.”

- Task 24, IEA DSM

Organizational Fields

Organizational field:

“those organizations that ... constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products.”

(DiMaggio and Powell, 1983)

Field structure: how the components of the field are organized

Institutional logics: how belief systems and associated practices guide the field

Research Questions

1. Who are the key stakeholders that influence energy management practices in Ontario hospitals?
2. How does the organizational and organizational field-level context influence actors regarding energy efficiency implementation?

Methodology

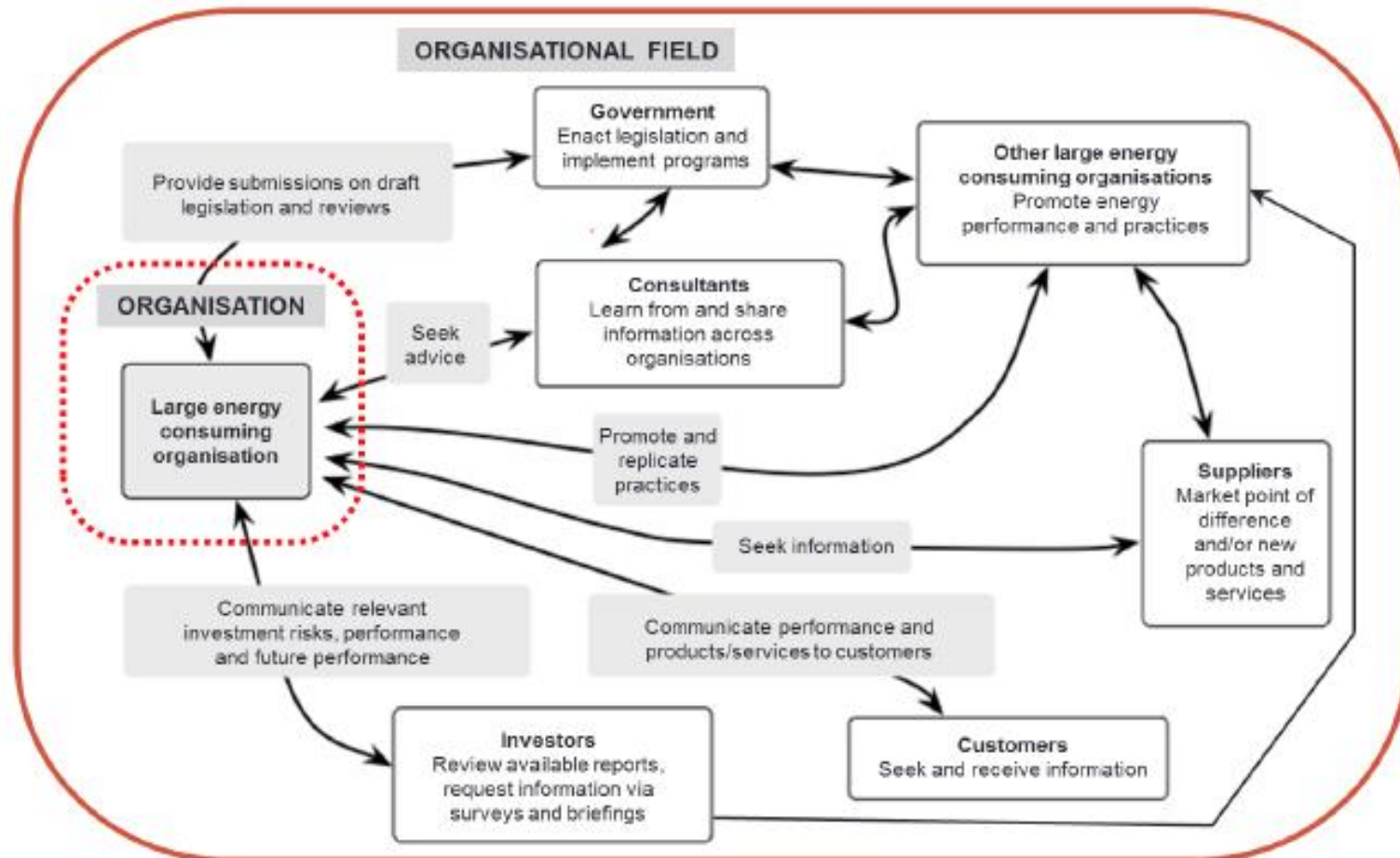
- The stakeholders within the organizational field were revealed inductively through
 - Analysis of archival data: websites, strategic plans, ministry documents and conservation and demand management (CDM) plans
- Interviews of senior administrators of 14 hospitals and thematic analysis to understand how this context informs pressures and impediments

Research Question 1

Who are the key stakeholders that influence energy management practices in Ontario hospitals?

Organizational Field:

Energy Management Practices in Australian Organizations



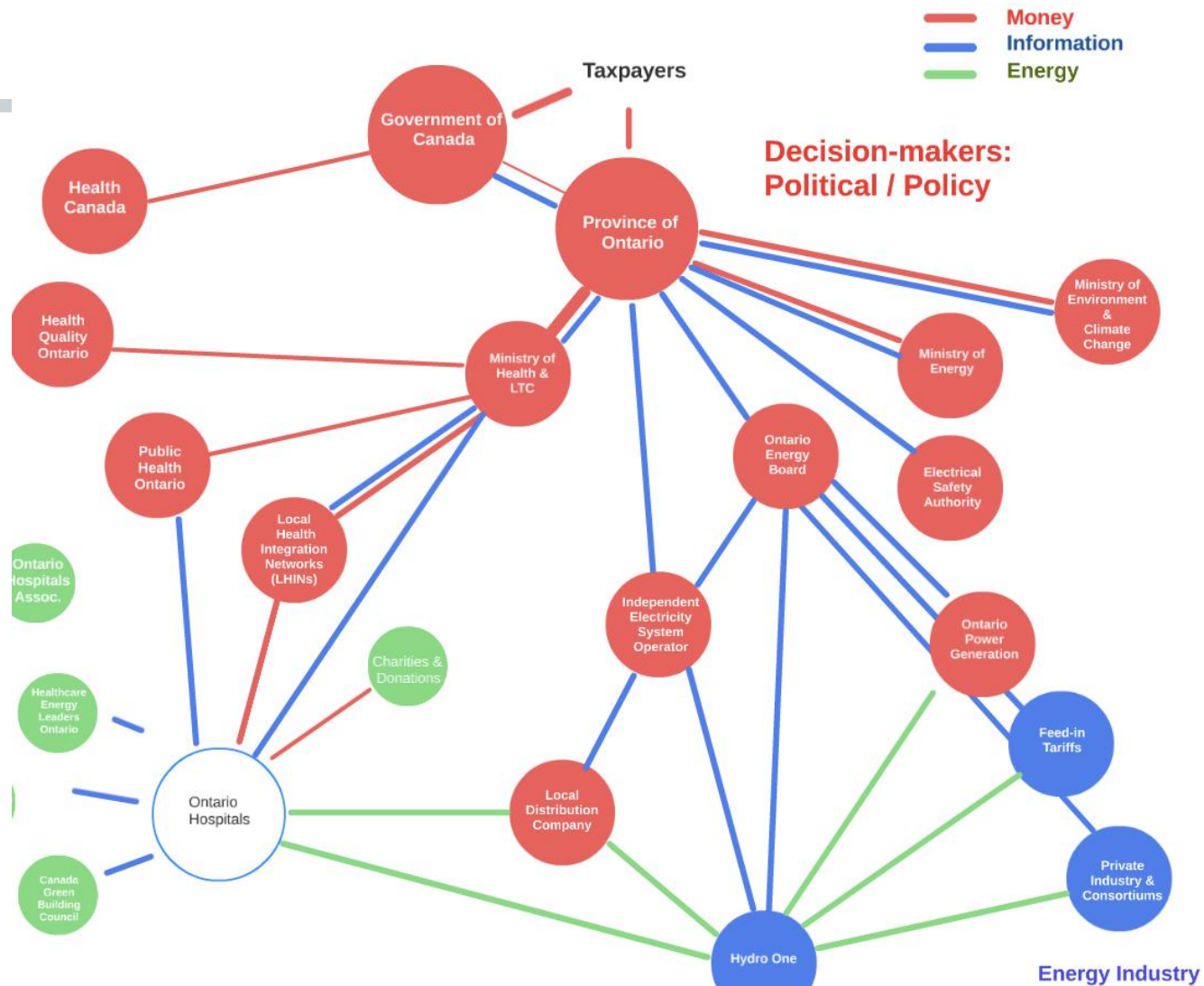
Crittenden (2014)

Actors in Organizational Field

“Rather than understanding the behaviour of the end users, we want to understand the behaviour of the ‘Behaviour Changers’” – IEA DSM

- Government (Decision Makers / Policy)
- Energy Industry/Provider (Utilities)
- Intermediaries (Tradespeople, energy auditors, ESCO facilities, etc.)
- Research Experts (Multidisciplinary)
- Third Sector (NGOs, community groups, etc)

Decision-makers: Political / Policy



Research Question #2

How does the organizational and organizational field-level context influence actors regarding energy efficiency implementation?

Financial & Strategic Tensions: Federal & Provincial Government

1867: *Canadian Constitution*

- **Provinces:** responsible for establishment, maintenance, and management of hospitals

1966: *Medical Care Act*

- **Federal government** commits to sharing costs with the provinces (50%)
- **Must be universally available to all provincial residents on equal terms and conditions**

1977 : Federal government : no, we're no longer paying half.

- increasing levels of tension and animosity between the two levels of government over public health care policy.

1984 *Canada Health Act:*

- **Federal government** introduces legislation re-establishing conditions on the provinces, maintains national standards on public health care - Prohibits user fees and extra-billing

Tensions...

1990s : Federal government running surpluses, tension with provinces continues to build

2003 Accord on Health Care Renewal

- **Federal government** federal support of health care to around 25% of total cost **Provincial governments** agree to federal demands

2010 Balanced Budget Requirement – Provincial Legislation

- 40 % of Ontario hospitals were running under a deficit
- Hospitals are required, by law, to run a balanced budget

2012 to 2014:

- Required to develop 5 year Conservation and Demand Management Plans

Present:

- **Federal government** continues to pay around 25% of health bill
- **Ontario in 2014:** Province paid \$50 B (38% of budget), Federal Government paid \$16 B

Findings: Qualitative Approach to Identifying Impediments

Three major themes emerged as barriers to energy efficiency projects in Ontario hospitals:

- ① Energy Efficiency has Low Priority
- ② Balanced Budget Requirement
- ③ Risk Aversion

Findings

Financial Tensions

- Tension and animosity between the two levels of government over public health care policy and funding.
- Balanced-Budget Requirement

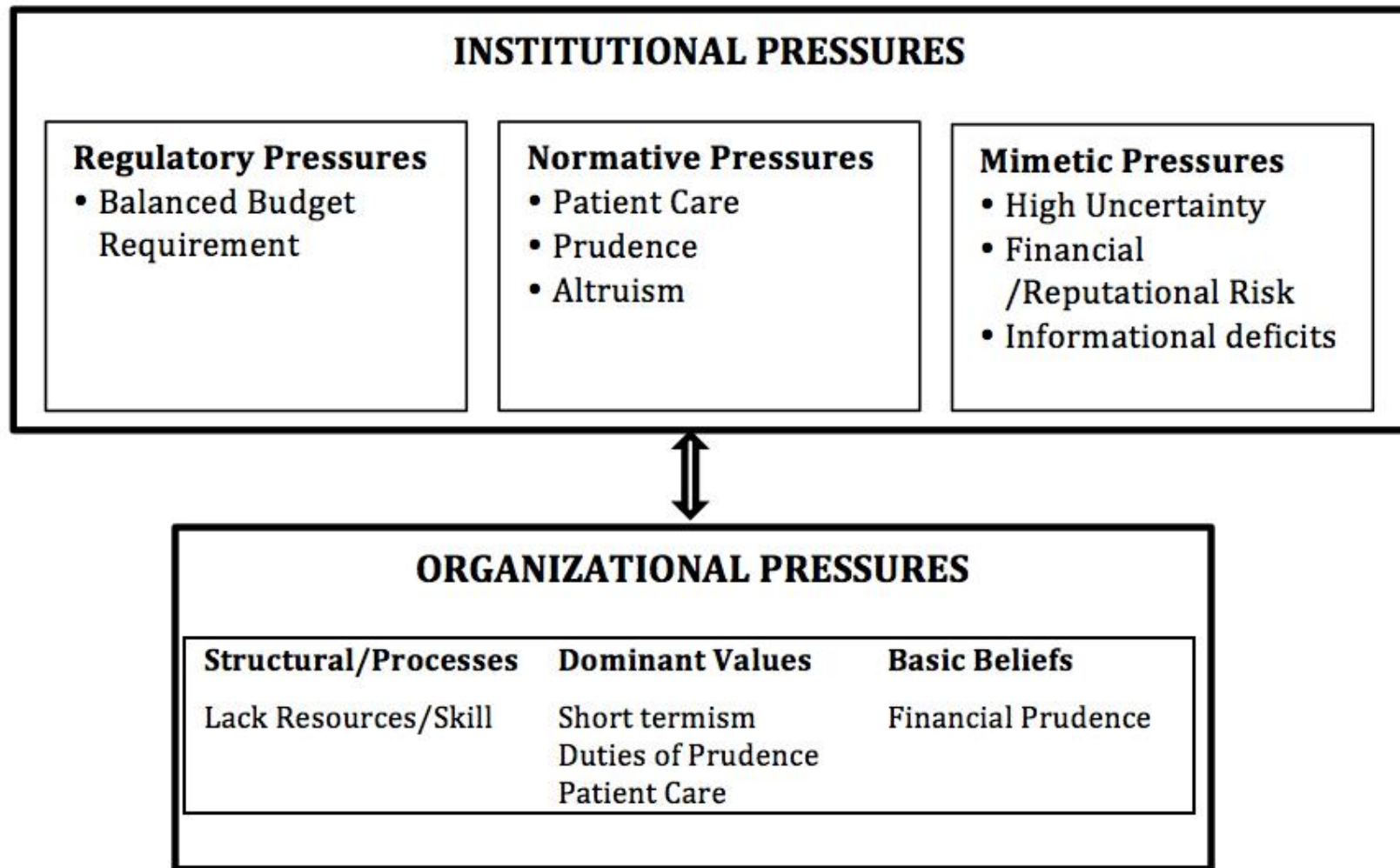
Values/Beliefs

- Altruism in the Public Sector
 - Duty to act prudently
 - Patient Care focus
- Risk Aversion
 - Aversion to Borrowing
 - Short-termism

Mimetic Forces

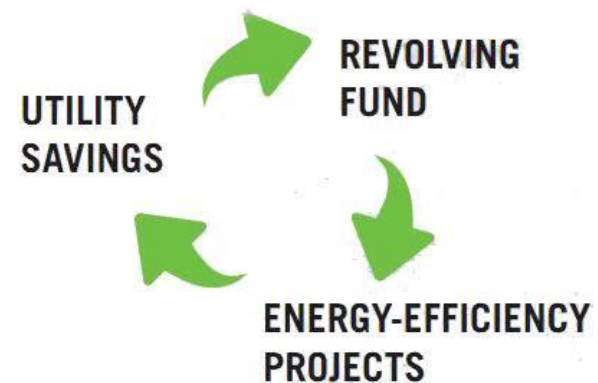
- Uncertainty
- Reputation

Pressures on Energy Efficiency in Ontario Hospitals



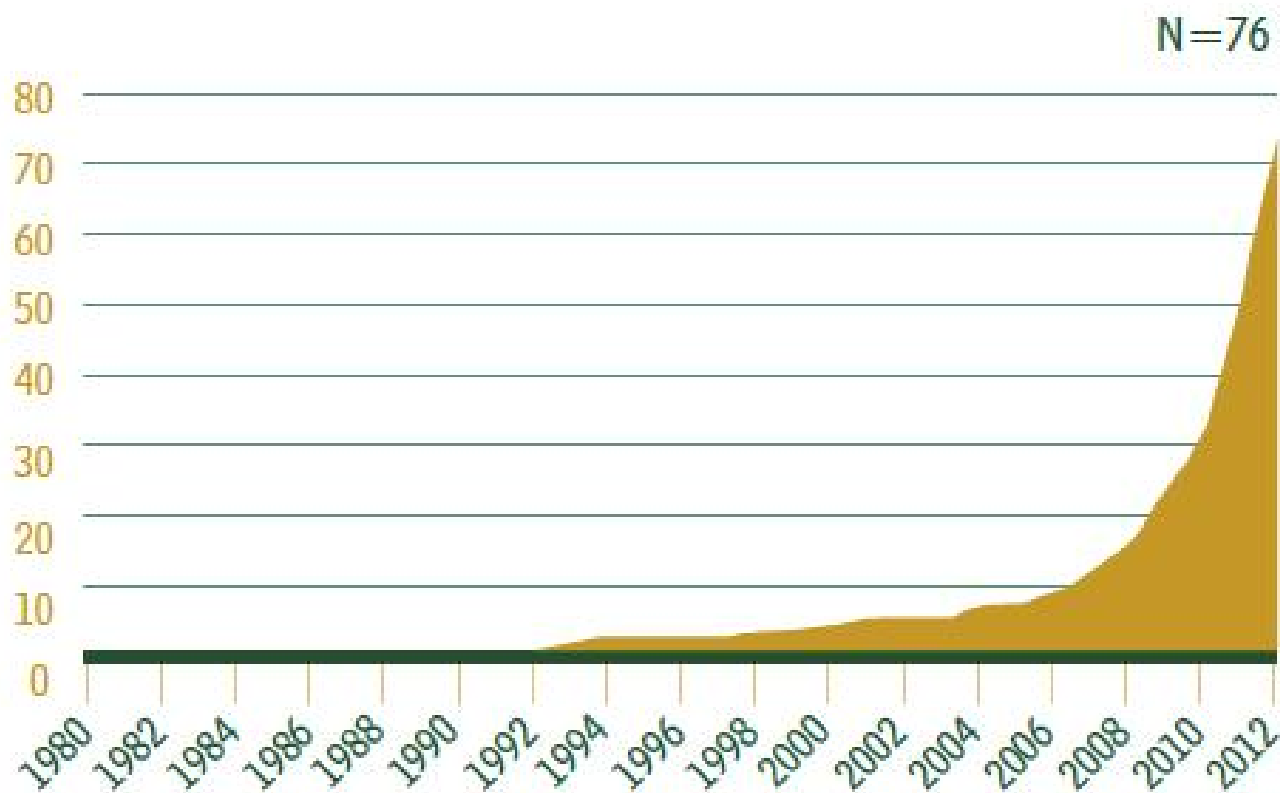
Green Revolving Funds (GRF)

- **Funding vehicle providing financing** to implementing energy efficiency **that generates cost-savings. Savings are tracked** and used to **replenish the fund** for the next round of green investments
- Ideal tool for the public sector, that faces silos in decision making and funding
- Funds are earmarked and dedicated to energy efficiency, offering a systematic approach



Growth in GRFs – US & Canadian Universities

Growth of Green Revolving Funds: 1980–2012



Source: SEI (2012)

Benefits of Green Revolving Funds

- Without a revolving fund, each individual efficiency project requires both funding and appropriate approval (*economic, behavioural and organisational barriers, uncertainty, prudence, etc.*)
- A green revolving requires *a single decision*, the set up of the fund.
- Once the fund is set up, energy efficiency is prioritized, institutionalized... given the green light.
- Projects are continually funded and not re-prioritized in times of budget cuts or based on the individual interests of decision makers
- ***Creates a programmatic approach:*** A GRF creates a formalized program of sustainability investments rather than a series of one-off projects. An ongoing source of capital is available over the long term, to continually seek cost savings through efficiency projects

Thank you

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