ISO/Gridcos versus Transcos:
What, Why and Who Cares?

Larry E. Ruff

Harvard Electricity Policy Group
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Agenda

The Basic Functions in Electricity
An ISO/Gridco System
What Is a Transco?
Other Stuff
Conclusions
The Basic Functions in Electricity

- **Consumers**
  - Low-Volt Wires
    - MWh
  - Retail Trading
    - $$$
  - Spot Trading
    - Spot $$$
  - Contract Trading
    - Contract $$$
- **Dispatch**
  - Info
  - MWh
- **Spot Trading**
  - Info
  - Spot $$$
- **Contract Trading**
  - Info
  - Contract $$$
- **Generators**
  - Info
  - MWh
  - Contract $$$
Functional Entities in a Competitive System

- **Consumers**
- **Gencos**
- **Retailcos**
- **Traders**
- **Dispatch**
- **Spot Trading**
- **Distco**
- **Gridco**

- **MWh**
- **Info**
- **Spot $$$**
- **Contract $$$**

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ISO/Gridcos versus Transcos
The Critical Dispatch/Market Functions

Consumers

Distco

SO

RTM

DAM?

Gridco

Gencos

Retailcos

BiLats

PXs

Traders

Contract $$$

Spot $$$

Spot $$$

Spot $$$

MWh

MWh

$$$

$$$

$$$

$$$

Info

Info

Info

Info
An ISO/GridCo System

- Consumers
  - Distco
  - Gridco
  - Gencos
  - RTM
  - ISO
  - BiLats
  - PXs
  - DAM?
  - Traders
  - Retailcos

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ISO/Gridcos versus Transcos
An ISO/Gridco System

The (Perhaps-for-Profit) ISO:
• Operates dispatch/markets processes designed and governed by stakeholder-selected board
• Leads system planning/solicitation processes

Gridco(s) Are For-Profit Companies that:
• Own and operate grid under “lease” with ISO
• Have PBRs to motivate efficiency
• Provide planning info to ISO
• Do not unilaterally plan or invest in grid
• May compete in ISO-run solicitations

Separate ISO and Gridco provide checks and balances on each other
?? Transco = Gridco + SO ??

Diagram showing the relationships between various entities such as Consumers, Distco, Transco, Gridco, SO, Gencos, Retailcos, BiLats, PXs, RTM, DAM, Traders, and a note on "Official" PX.
Transco = Gridco + SO

This is what most seem to mean by a “Transco”

- Combines grid and system operations (SO)
- Does not mess around with markets (even RTM)

But if Transco’s SO does not operate even a RTM:

- How are real-time operations managed?
- How are imbalances & congestion priced?
- How are transmission rights defined/administered?

Most Transco proposals assume/require non-market or flowgate-based congestion management and hence are a very bad idea whatever their other alleged advantages
?? Transco = Gridco + (SO + RTM) ??
= Gridco + ISO
?? Transco = Gridco + (SO + RTM) ??
= Gridco + ISO

This would restore critical SO/RTM integration, but:
• Would create other problems
• Is not usually part of Transco proposals

Do FERC/stakeholders design/govern the ISO/RTM?
• “Yes” dilutes Transco incentives/accountability
• “No” is probably unacceptable (at least in US)

Combining Gridco and ISO creates:
• Conflicts of interest in operations, planning and solicitation processes
• Monolith that is difficult to manage and regulate
Grid Planning and Investment

A Transco that owns Gridco and is the ISO can/will:
• Monopolize information necessary for planning
• Favor grid over generation/demand-side
• Favor its Gridco over competitive grid investors

These inherent conflicts will require that:
• Somebody else – who?? -- do planning studies and choose among options and vendors; and/or
• Affiliated GridCos be excluded from competitive solicitations

Given concerns about conflicts, for-profit Gridcos will probably do better with an ISO than as part of a Transco
PBR of For-Profit TransCo

PBR will be very difficult, because a Transco:

• Monopolizes system information
• Provides complex services
• Has inherent conflicts of interest

Quantifiable measures of Transco performance:

• Are hard to imagine and lead to suboptimization
• Examples such as “maximize throughput” or “minimize congestion” are not encouraging

The “right” investment PBR would require fixed Transco revenue to cover total investment plus operating costs over 30+ years
Experience with NGC in England & Wales

NGC is a Transco (i.e., owns grid, is SO) that:

- Operated Pool until NETA started in March 2001
- Operates Balancing *Mechanism* (BM) now

Largely successful from most perspectives

- PBR $\rightarrow$ lower “uplift” in Pool, BM costs in NETA
- Grid has been expanded/upgraded
- Users seem happy (with the usual grumbling)
- NGC is very profitable (may be more so w. NETA)

But Brits are remarkably tolerant of:

- Opaque, powerful, very profitable monopolies
- Light-handed/wrong-headed, unappealable regulation

*NGC would/will not do as well here*
**Efficiency, Risks, Liability and Incentives**

Will for-profit Transcos be more efficient because they:
- Have large assets that can be put at risk?
- Are more sensitive to costs and profits?

In reality, Transcos are good at:
- Defining/using PBRs to get large upsides
- Avoiding liability for their actions
- Leveraging their monopoly to get unregulated profits

ISOs are not easy to control or motivate, but can be:
- Given management and profit incentives
- Governed in “the public interest” (for better or worse)

*If it were easy to get efficient performance from monopolies, we would not be doing all this.*
Merchant Transmission Investment

Why exclude merchant transmission if:
• “Good” market signals let it emerge?
• Investors put up their own money?
• It does not preclude efficient regulated options?

An ISO unaffiliated with any Gridcos could fairly:
• Evaluate competing merchant proposals
• Decide when a regulated option is better
• Solicit regulated and merchant investors

Again, for-profit Gridcos will probably do better with an ISO than as part of a Transco
Conclusions on ISO/Gridcos vs. Transcos

The critical issue is system operations and pricing

- If “Transco” → Non-market operations and precludes LMP, it is a very bad idea.
- If a Transco operates an RTM (+DAM?), some of its alleged advantages are reduced

Most of the alleged advantages of a for-profit Transco:

- Are at best unproven/overstated
- Could be obtained at least as well with a Gridco

It is unwise to claim or expect too much from any “solution,” given the inherent difficulty of motivating and controlling complex infrastructure monopolies