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# ***Market, State, Regulation & Yellow Submarine***

***IAEE***

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# In the city where...

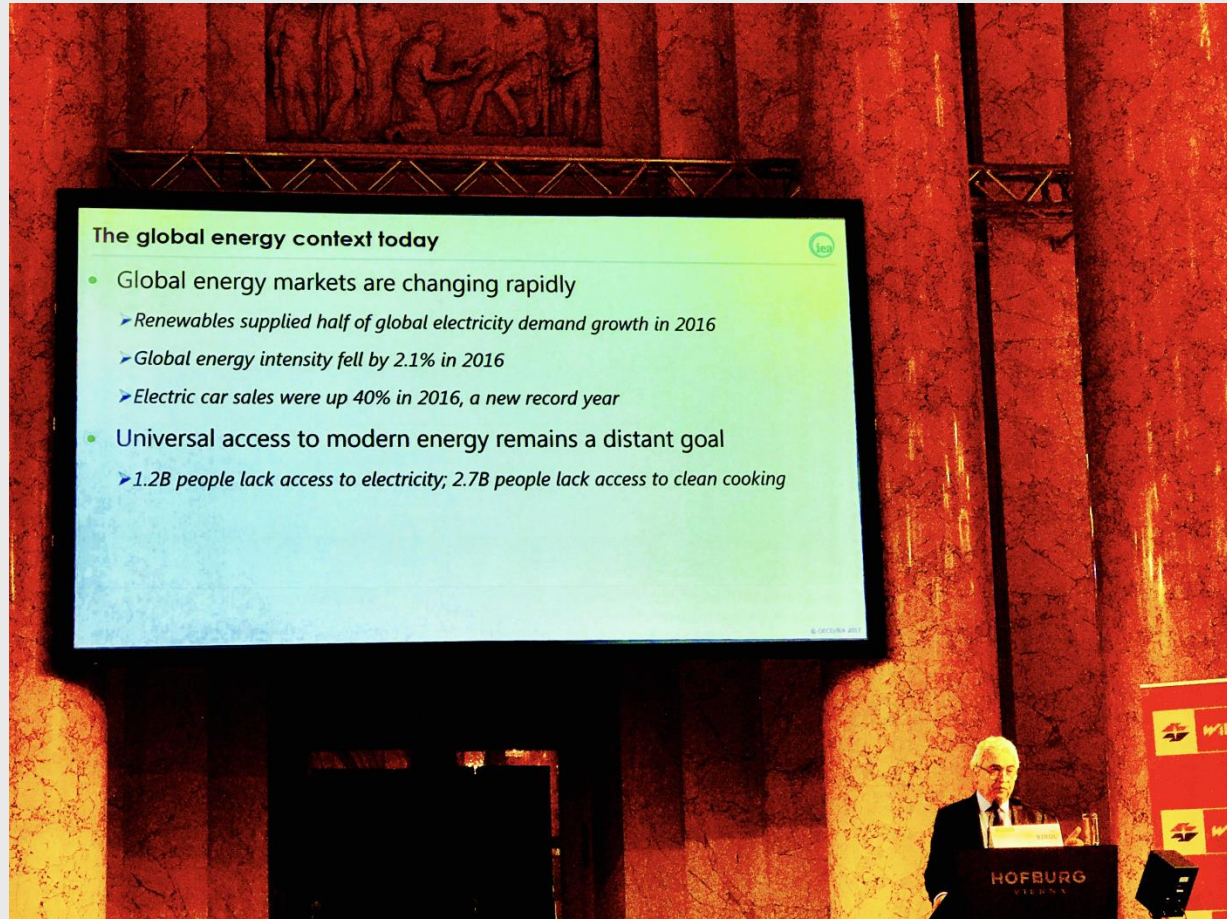
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*I was born...*





## Yesterday, where's yellow vs Black & White?





# **Yellow's a governance issue = Institutional economics**

***Institutional Economics  
You know...***

***Ronald Coase 1991...***

***Douglass North 1993...***

***Elinor Ostrom...***

***& Oliver Williamson 2009***





# Now please...



**Fasten  
your seat  
belt:  
Take-off**



# State, Market & Regulation Lego

- **Old governance: Integrated Infrastructure Monopoly + “GrandPa” Public Service**

1- Old roots & bones are “**infrastructure monopoly**” (“essential facility” pricing) (J. Dupuit 1840, A. Marshall 1880, A. Pigou 1920)

2- But real flesh is **Integrated “Mass Market”** regulated services framed by “Political economy”

*Olie Williamson: asset specificity > “fundamental transformation”*

*Doug. North: monopoly assets are trapped > General Institutions set basic rules > industry contracting align*

**(Universal Service + Postal Stamp) + (Social Tariff + Labour working conditions + Coal miners jobs + Peripheral territories) + ?**



# State, Market, Regulation Lego

- **New Governance: Double unbundling + incentive regulation**
  - 1- Unbundling “Infrastructure facility” from “final services” > credibility to market opening for technology choices & final services
  - 2- Unbundling “Regulation” from “Political economy” > credibility to regulatory ruling outside political deals
  - 3- Power Sector two times unbundled > you can go to “Incentive Regulation”,  
... and face its “seams”



# Regulation: a Lego to play...

- **Seam(1): Coordinating the unbundled Industry + Then designing (= ruling) the market**
  - 1- Rules for Infrastructures access & usage  
interact with “final services market” via “system operation” (Olie Williamson)
  - 2- “System operation neutrality”  
is extremely “market design” sensitive
  - 3- To get infrastructure operation right  
you have to design the market rules





# Regulation: a Lego to play...

- **Seam(1): Coordinating the unbundled Industry + Then designing (= ruling) the market**

4 - Revenge of Ronald Coase: markets need trade infrastructures; private order or public law; but Rules: transaction <> coordination

Hard fact – Comprehensive “Electricity Transaction” is made of:

- a- Trading Energy “day-Ahead” in wholesale market
- b- Looking if grid can deliver Energy Equilibrium > network capacity, or congestion
- c- Keeping Energy balanced “Real Time” > balancing with Power Reserve

“Real” electricity made of 3 goods: Energy, Power, Network.

Energy only is “incomplete market”



# Regulation: a Lego to play...

- **Seam(2): Coordinating zones of infrastructures + Then designing zones of the market**
  - 1- Rules for each infrastructure “zone” interact with “final services market” in **other zones** via “system operation zonal rules” (Olie Williamson)
  - 2- “System operation neutrality” **at continental scale** is extremely “System operation seams” and “market design seams” sensitive
  - 3- BUT coordinating (**“zone” to “zone”**) is (**“country” to “country”**) AND THIs is not unbundled from national governments and legislators

Revenge of Douglas North: in zonal domain of X-B interactions, the zonal governments & legislators hold the national keys.

How to rebundle (at EU level) the “nationally bundled”?



# Regulation: a Lego to play...

- **Seam(2): Coordinating zones of infrastructures + Designing zones of market**

**At EU level? ... EU has no regulatory power to issue EU regulations & no agencies to implement them**

EU Commission NOT a federal government with fed.agencies (as FERC or EPA)

- > NO EU system operation regulation till 2017!

- > NO EU market design till... 2017 (hidden into System Operation Guidelines)

\*Tricks 3dPackage 2009 (NRAS> ACER)> Guidelines; (TSOs> ENTSO-E)>Codes

\*\*SOFTWARE: 1<sup>st</sup> System Operation EU regulation 2015; input for drafting;  
coop. for methodologies & implementation

\*\*\*HARDWARE: 1<sup>st</sup> Infrastructure EU Regulation 2013; but cut from ENTSO-E



# I won't do... C02 & RES push

**C02 mitigation as another brand new public policy; with 2 faces**

## **1- Hard economic approach: pricing carbon**

# Carbon Tax (Jo Stiglitz) or Cap & Trade (Jean Tirole)

# Read EEEP “*Economics of Energy & Environmental Policy*” IAEE  
Journal, September 2015

## **2- Political Economy & Industrial Policy approach: pushing renewables**

# RES obligation vs Feed-In;

# FiT vs FiP

# (RES *new Political Economy*) vs (Coal mines *old Political Eco.*)



## Let's take RES push as given...

***Does RES push delete or amplify “Industry-Market Seam(1)” and “Zonal vs EU Regulation Seam (2)” issues?***

- **Seam(1):** Coordinating the unbundled Industry + Then designing the market  
1- Rules for Infrastructures access & usage interact with “final services market” via “system operation” (Olie Williamson) 2- “System operation neutrality” is extremely “market design” sensitive 3- To get infrastructure operation right you have to design the market rules

***(Reinhard Haas & Richard Green this morning >>>) + Karsten Neuhoff right now***

- **Need to go to EU MarketDesign 2.0**
- **Then too EU NetworkCodes 2.0 (Karsten Neuhoff)**



## Let's take RES push as given...

Does RES push delete or amplify “Zonal vs EU Regulation” Seam (2) issues?

- **Seam(2): Coordinating zones of infrastructures + Then designing zones for market**

1- To tackle massive EU RES integration we need full

X-B congestion management

X-B balancing (... postponed 2023)

Market Bidding Zones review

X-B Network planning

>> ***stronger Europeanisation of TSOs and of NRAs***

- ***4<sup>th</sup> package? Fierce national resistance!***



# Let's take RES push as given...

***RES also create new “Seams issues”:* distributed generation, distribution grids, distributed systems**

- **Seam(3):** Coordinating *deeper* the unbundled Industry + Then designing *deeper* the market
  - 1- Rules for ***Distribution Infrastructures access & usage*** interact with rules for transmission
  - 2- Markets for network services at distribution & transmission levels interact “final services market” via “***distrib. system operation***” (Olie Williamson)
- Need to go to **deeper EU MarketDesign 2.0 & deeper EU NetworkCodes 2.0** (Reinhard Haas) (Karsten Neuhoff)
- ***Infra-national only? Or supra-national too?***



## Schumpeter wave: Decentral. + Digital.

***FORGET that RES are Green see them only as Yellow! !!***

“Decentral. / Digital” to change Governance needs & options? **OF COURSE**

1/ Industry Unbundling 1990-2010 did create “modular” elec. Industry which did spread into “modular” Market Design(s)

***Generation decentralization + Consumption decentralization*** push this to new limits as “Self-governed individual Prosumers”

2/ (***Digitalization + Massive data processing***) injected in Decentralization of Operation

brings “Internet & Smart Tools” inside Electricity world 4<sup>th</sup> Industrial revolution. You don’t believe it? Electrical & self-driven “Google cars”





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## Schumpeter wave: Decentral. + Digital.

4<sup>th</sup> Indus Revolution accelerates all “*micro-micro*” = *nano?* changes:

# micro modularity of industry (say RES > Prosumers);

# modularity of “Transaction Designs” (Say > New Intermediaries as aggregators, alternative Transaction Platforms, etc.);

# it opens too “Users modularity” (Say > Active Block-chain Communities)



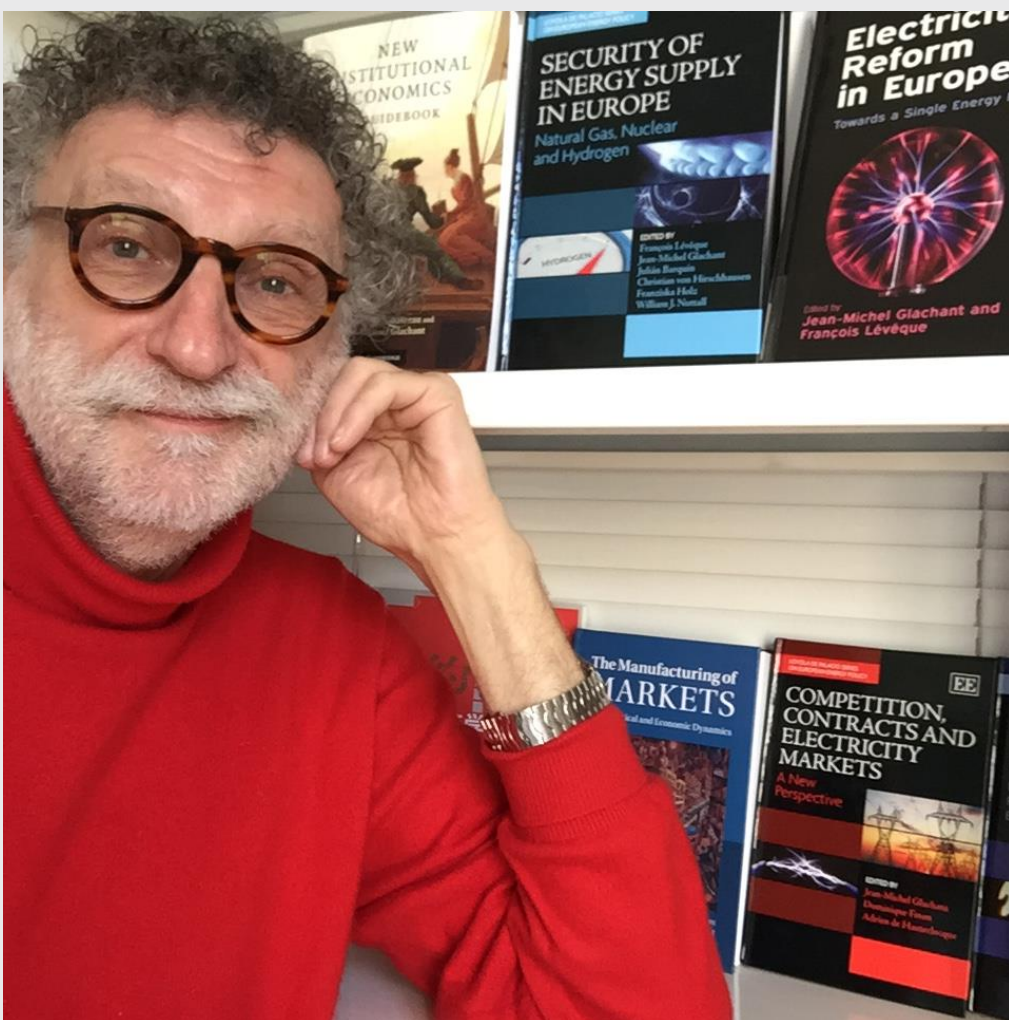
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# How to conclude such amount of novelties?

#Pa & GrandPa both dead? #To see-smell corpses in 2022?





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# Schumpeter wave Digitiz.Decentriz.?

**Governance “innovation” through decentralization & digitalization**

Brave new world made of Industry strong Decentralization & Modularity +  
Pioneer new Entrepreneurs + Pioneer Users Communities

If regulation follows, it can open 5 new worlds:

*1-Forums* (Open debate for new coordination rules)

*~2-Innovation Zoos* (“Sand boxes” for advanced innovators put outside  
common regulation)

*~3-Communities* (“Users & Prosumers Clubs” : self-regulated users-producers  
close-shop)

*~4-Roaring Cow-Boys* (New York “plug-and-play” infrastructures open to new  
entrants)

*~5-Big e-Sisters* (Google, Apple, Amazon, etc. creating “Re-Integrated”  
alternative worlds. Irony: universal access; “postal stamp” or “Social tariff” as  
basic service for free)



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# Thank you for your attention

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