



Heinrich Böll Stiftung; The Greens

**Nuclear Power:
Asset or Barrier for the Energy Transition?**

Brussels, February 5, 2019

**Nuclear winter in Belgium
(short comments)**

**Aviel Verbruggen
University of Antwerp
www.avielverbruggen.be**

**Research motto
Prefer to speak true words receiving blame,
above deceiving advice in soliciting praise.**



Overview

- 1. How spending 10' time efficiently?**
Positioning the issue ↔ Latest twitter news
- 2. Belgium deep in nuclear**
⌘ France ⚡ from partner to master
- 3. Two FAQs:**
 - * Why so many stops of the NP plants in Belgium?**
 - * Why do ENGIE & EDF extend the lifetime of three 40 years old reactors (causing problems + considerable costs)?**

Belgian atomic powergen equipment



Name	Location	Capacity (upgraded)		Lifetime	
		MWe	Belgian %	Start	Stop (planned)
BR3	Belgium	11	100	1962	1987
CHOOZ A	France	310	50	1967	1991
DOEL I	Belgium	392 (433)	100	1974	(2024)
DOEL II	Belgium	392 (433)	100	1975	(2025)
TIHANGE I	Belgium	931 (962)	66.4	1975	(2025)
TRICASTIN I	France	915	12.5	1980	?
TRICASTIN II	France	915	12.5	1980	?
TRICASTIN III	France	915	12.5	1981	?
TRICASTIN IV	France	915	12.5	1981	?
DOEL III	Belgium	970 (1006)	100	1982	(2022)
TIHANGE II	Belgium	930 (1008)	100	1983	(2023)
DOEL IV	Belgium	1001 (1039)	100	1985	(2025)
TIHANGE III	Belgium	1015	100	1986	(2025)
SUPERPHENIX	France	1200	2.4	1986	1998
KALKAR	Germany	282	15	Cancelled	-
CHOOZ B1	France	1455 (1500)	25	1996	?
CHOOZ B2	France	1455 (1500)	25	1997	?

*Since ELECTRABEL is taken over by GDF-SUEZ and SPE by EDF, all Belgian nuclear power plants are now controlled by French companies



FAQ1: Why so many stops of the NPs in Belgium?

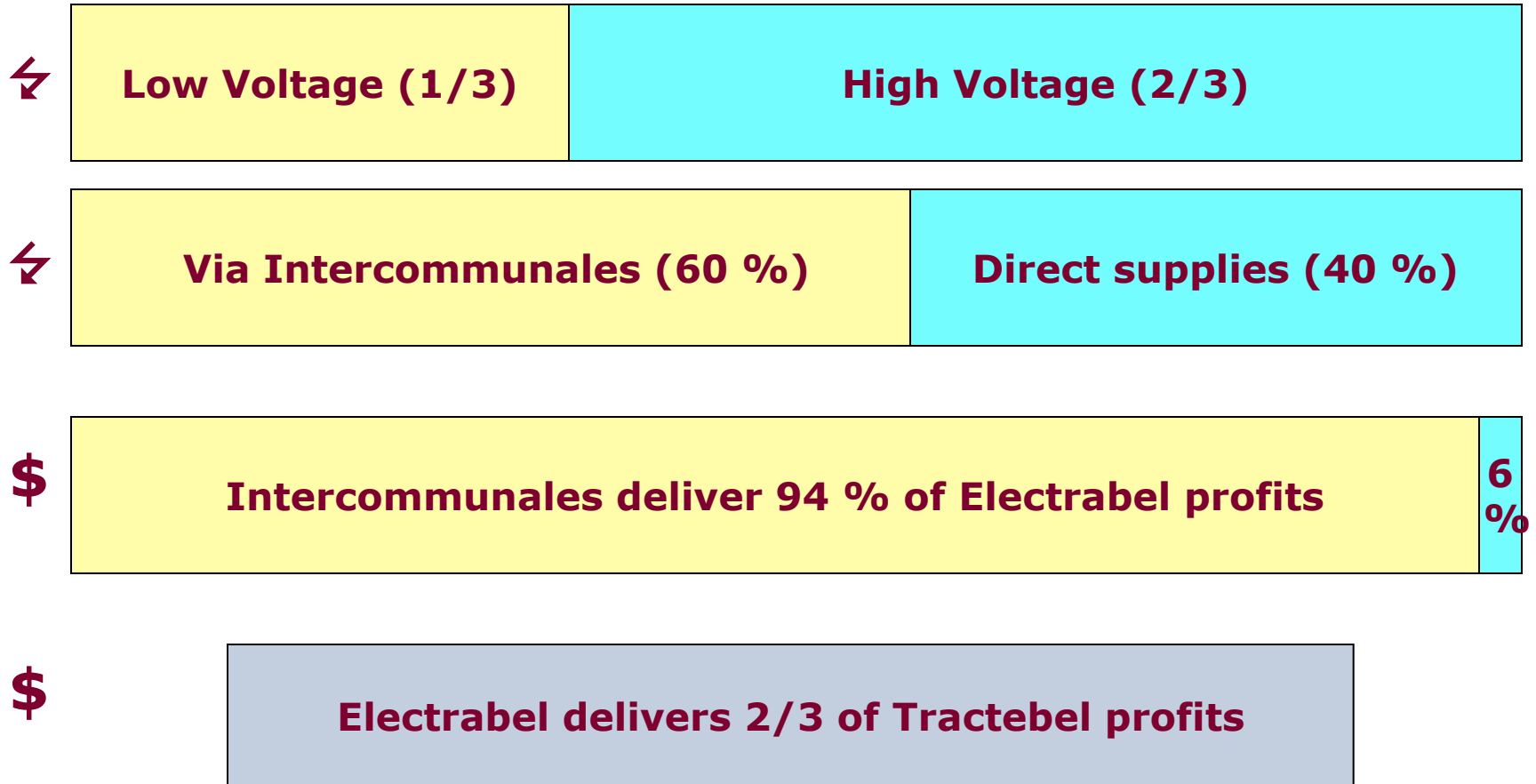
- **They are already old: more failures, more maintenance**
- **By draining enormous cash flows from ELECTRABEL to the SUEZ conglomerate, less money was available for investing in the Belgian electricity sector**
- **After decades of collusion among nuclear regulator & plant owners, FANC evolved to a more independent institute, applying rules more strictly**
- **ENGIE has become more risk-averse in nuclear matters. ENGIE really wants to avoid a serious accident**

Frequent stops and problem care provide more relief than deception and covering-up problems and failures.



Draining cash from Belgian electricity users Shares in Electricity & Profits

(Source: Lecture Belgian Parliament January 26, 1999)





FAQ2: Why do ENGIE & EDF extend the lifetime of three 40 years old reactors (causing problems + considerable costs)?

- **As long as some money can be reaped, investors continue to extort equipment**
- **Keeping the capacity on the billboard hides the shortage of investments over the last three decades (cash drain to France)**
- **Keeping nuclear plants alive holds place in the electric load diagram for large-scale supplies, precluding the call on new distributed supplies (household PV, cooperative wind)**
- **Postponing closure means postponing the abyss of an eternal future of costs without any income**
- **Psychologically, the generation of the 'nuclear dream' cannot face the real nightmare of nuclear power**