Economic perspective on Swiss energy policy measures regarding war on Ukraine

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1. Current situation EU
2. Policy options
3. Conclusion
Current situation EU
What’s the situation?

Russia is delivering less and less gas
  • Very large cuts recently
  • Prices are sky-high

French nuclear availability is exceptionally low
  • Due to corrosion problem in large part of the fleet
  • Forward prices indicate supply shortfalls

Switzerland is affected by both
  • Swiss gas comes from/via EU markets
  • Electricity market is interconnected
Russian supply cuts

First wave (the Rubel story...)

- Nord Stream 1 cut to 40%
- Non-credible justification ("western sanctions")
- Re-routing possible, but not used (via Poland or Ukraine)

This graph: @BaleseneO on Twitter.
Original source: Russian State Media TASS.

Second wave (increasing the heat)
Russia as a monopolist on EU natural gas market

By its actions, Russia influences European hub prices.

- Empty Gazprom-owned storages since April 2021
- No spot market supplies since October 2021
- The EU gas price (TTF) per MWh has risen from about 15 € pre-crisis to 150 € now

Long-term contracts

- Exact specification unknown – analysts say:
- LTCs define a minimum and maximum offtake, both daily and annually
- Prices are usually indexed to EU hub prices (e.g. to the front-month contract)
- Buyers know the LTC prices ex-ante before nominating daily quantity

Russian market power

- This exposes gas prices to Russian market power

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Gas price developments

Dutch TTF Gas Futures July 22 Contract

Russian market power

Russia prefers low volumes, not high!

Result for Europe
- Low gas volumes
- Extremely high gas prices (squeezed market)
- High payments towards Russia

Market power perspective
- Has policy implications
- Is not the only perspective
Tariff on Russian gas

**Strategic incentives w. tariff**
- Russian gas is “taxed”
- RU still aims to squeeze market, to increase price

**Consequences**
- Pro: Reduce RU revenues
- Con: Squeeze EU markets even further

![Diagram showing residual demand for Russian gas by EU and marginal cost RU.](image)
Price-cap towards Russian gas

Incentives under price-cap

- Russia will try to deliver as much as possible (from econ. perspective)
- No economic benefits for RU to squeeze EU market
- Russia could simply reject and not deliver

Consequences

- Reduce RU revenues relative to keeping as is
- Gives RU incentives to increase supply
The other crisis: Electricity

France likely to suffer power shortages in winter
- Very low nuclear availability next winter
- Stress corrosion in many similar reactors

→ Demand will be price-setting in many hours

French DEC22 Future Price

1513 EUR/MWh
72 EUR/MWh

Source: theice.com
Policy options for Switzerland
Long- versus short-term policy aims

Normal situation
➢ Prices determined by "normal" supply, demand and weather dynamics
Long- versus short-term policy aims

Normal situation
- Prices determined by „normal“ supply, demand and weather dynamics

Long-term policy aim:
- Efficient rationing during scarcity (least costly loads first)
- Scarcity revenues provide incentive to invest in supply
- Higher cost provides incentive to make loads flexible
- Ensure sufficient long-term contracting to mitigate market power
Long- versus short-term policy aims

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Current situation

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Long- versus short-term policy aims

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Current situation:
- (Threat of) large price increases due to embargo / supply cuts

Long-term policy aim:
- Efficient rationing during scarcity (least costly loads first)
- Scarcity revenues provide incentive to invest in supply
- Higher cost provides incentive to make loads flexible
- Ensure sufficient long-term contracting to mitigate market power

Short-term policy aim:
- Efficient rationing during scarcity (least costly loads first)
- Reduce supplier revenues (esp. for Russia)
- Reduce burden on inflexible consumers
- Expose flexible customers protected by fixed tariffs to energy saving incentives
Overview of short-term policy options

What options are there?

- Consumption subsidies
  - [X]

- Compensation schemes (lump-sum)
  - [✓]

Pre-curtailment:

- Energy saving information & nudges\(^1\)
  - [✓]

- Energy saving rewards & taxes\(^1\)
  - [✓]

During curtailment:

- Bans & fines on energy intensive usage\(^1\)
  - [✓]

- Contingency plans and load-shedding\(^1\)
  - [✓]

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Consumption subsidies

- Increases WTP of demand
- Increases price and supplier revenues
- Not suitable if supply is inelastic (or much less elastic than demand)

https://background.tagesspiegel.de/energie-klima/direkte-energiepreis-subventionen-fuer-die-industrie

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Compensation schemes

Compensation
• Should be proportional to the „excess cost“ from higher gas prices
• Should be independent of the influenceable energy demand, e.g.
  • Proportional to historical energy demand (no benefit for past efficiency measures)
  • Fixed rate per household/ person with gas heating (benefit for past efficiency measures)
• Paid as lump sum / independent of gas bill\(^1\)

Refinancing
• Existing taxes or government budget \(\rightarrow\) financing gap / income progression
• New tax on gas supply/consumption \(\rightarrow\) similar impact as saving reward

Design risks
• Dilution of saving incentive (if compensation is perceived as part of energy bill) \(^1\)
• Windfall profit


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Energy saving information & nudges

Information on how to save energy

Monitor & focus public attention on energy situation

Source: https://www.energiewechsel.de/

Source: https://www.energiewechsel.de/


Source: https://cdn.24.co.za/files/Cms/General/d/7119/fca376f812f44819ae6330bab5087672.png
Overview of short-term policy options

What options are there?

• Consumption subsidies
  - ☒

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Pre-curtailment:

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• Contingency plans and load-shedding
  - ✓

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Energy saving rewards and taxes

Jens Suedekum
@jsuedekum

Der private Gasverbrauch muss dringend reduziert werden, um den drohenden Gasmangel im Winter noch abzuwenden.

Deshalb habe ich heute gemeinsam mit @NinaScheer_SPD einen #Energiesparbonus vorgeschlagen.

Hier die Details: nina-scheer.de/wp-content/upl...

Translate Tweet

rtl.de
SPD-Politikerin Nina Scheer fordert Prämie: Kommt der Gas...
Russland stellt das Gas ab – also müssten eigentlich auch die Privathaushalte mehr Gas einsparen. Die SPD fordert ...

7:16 PM · Jun 21, 2022 · Twitter for iPhone
Energy saving rewards and taxes

Equivalence of tax and reward schemes

Tax equivalent to energy savings reward, if:

i. Tax = Energy saving reward + refinancing charge

ii. Redistribution = proportional to baseline consumption of the energy savings incentive

Energy savings reward easier to communicate/understand?

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Energy saving rewards

Choice of baseline 1):

- **Contractual**
  - only feasible for larger / industrial customers
  - limited to contracts signed in past (to avoid perverse incentives)

- **Administrative**
  - based on historical consumption before the February 2022
  - indexed to heating degree days

**Design of reward**

- Using data from suppliers, but paying separately
- Including minimum threshold, to reduce fiscal burden / reward for spurious savings?

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Overview of short-term policy options

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• Energy saving rewards & taxes

During curtailment:

• Bans & fines on energy intensive usage

• Contingency plans and load-shedding

https://www.diw.de/documents/publikationen/73/diw_01.c.839772.de/diwkompakt_2022-177.pdf
Bans, fines and contingency plans

Examples from electricity:

- **Verbote und Verbrauchs einschränkungen**
  - Um Energie zu sparen werden nicht absolut notwendige, energieintensive Geräte durch den Bundesrat verboten.
  - Dazu könnten u.a. folgende Einrichtungen gehören:
    - Sauna, Whirlpool, Schwimmbäder
    - Klimaanlagen
    - Rolltreppen und Aufzüge
    - Schaukelstühle beleuchtungen, Leuchtreklamen
    - usw.
  - Die Liste wird durch den Bundesrat festgelegt und in einer Bewirtschaftungsverordnung publiziert.

- **Kontingentierung**
  - Kontingentierung ist die „sachte“ Sparmassnahme.
  - Alle Grossverbraucher sind dazu verpflichtet eine angeordnete Energiemenge einzusparen, um Abschaltungen möglichst zu vermeiden.
  - Grossverbraucher haben diesbezüglich Vorteile:
    - Sie sind am Besten in der Lage, sich darauf vorzubereiten.
    - Sie können individuelle unternehmens- interne Massnahmen planen, die ihren Betrieb am geringsten beeinträchtigen würden.

- **Zyklische Abschaltungen**
  - Zwei Stufen von Abschaltungen sind vorbereitet:
    - 4h Unterbruch, bis zu 8h Versorgung für jedes Teilgebiet
    - 4h Unterbruch, bis zu 4h Versorgung für jedes Teilgebiet

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**Measures for gas saving**

- Mandatory maximum indoor temperature (business, households)
- Max number of rooms allowed to heat
- Encourage wearing warm jacket indoors
- Rationing supply for industry
- ...

1) Source: Ostral.ch

Use voluntary saving incentives as long/much as possible first

- Define monthly increase of **energy saving reward as function** of a) curtailment likelihood or b) deviation from energy saving targets
- **Raise energy saving reward to VOLL** before using contingents / curtailments

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**Merit order of demand reduction by large customers during OSTRAL**

### MeritOrder of Curtailments

- **Immobilie1**
- **Soz. Unternehmen**
- **Immobilie2**
- **Bank**
- **Industrie**

Some of contingency measures are much less costly than others

Restricting all customers by the same percentage is much more expensive than restricting least-costly customers first

Source: Own illustration based on Naegeli (2022): „Die drohende Strommangellage und wie sich Stromgrossverbraucher in der Schweiz auf die mögliche Krise vorbereiten“.
Conclusion
Conclusion

The situation is serious

• An acute energy crisis this winter is likely (for EU and CH)
• Policy makers should act now to prepare for potential scarcity

We discourage

• Subsidizing energy demand

We suggest

• Energy saving target and information campaign
• Energy saving reward scheme
• As last resort: Bans & fine for energy intensive activities

International cooperation is key
Thank you for your attention