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Norwegian climate objectives – tough targets and weak policies?

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INTERNATIONAL VISTA SEMINAR, THE NORWEGIAN ACADEMY OF SCIENCE AND LETTERS,

05.11.2019

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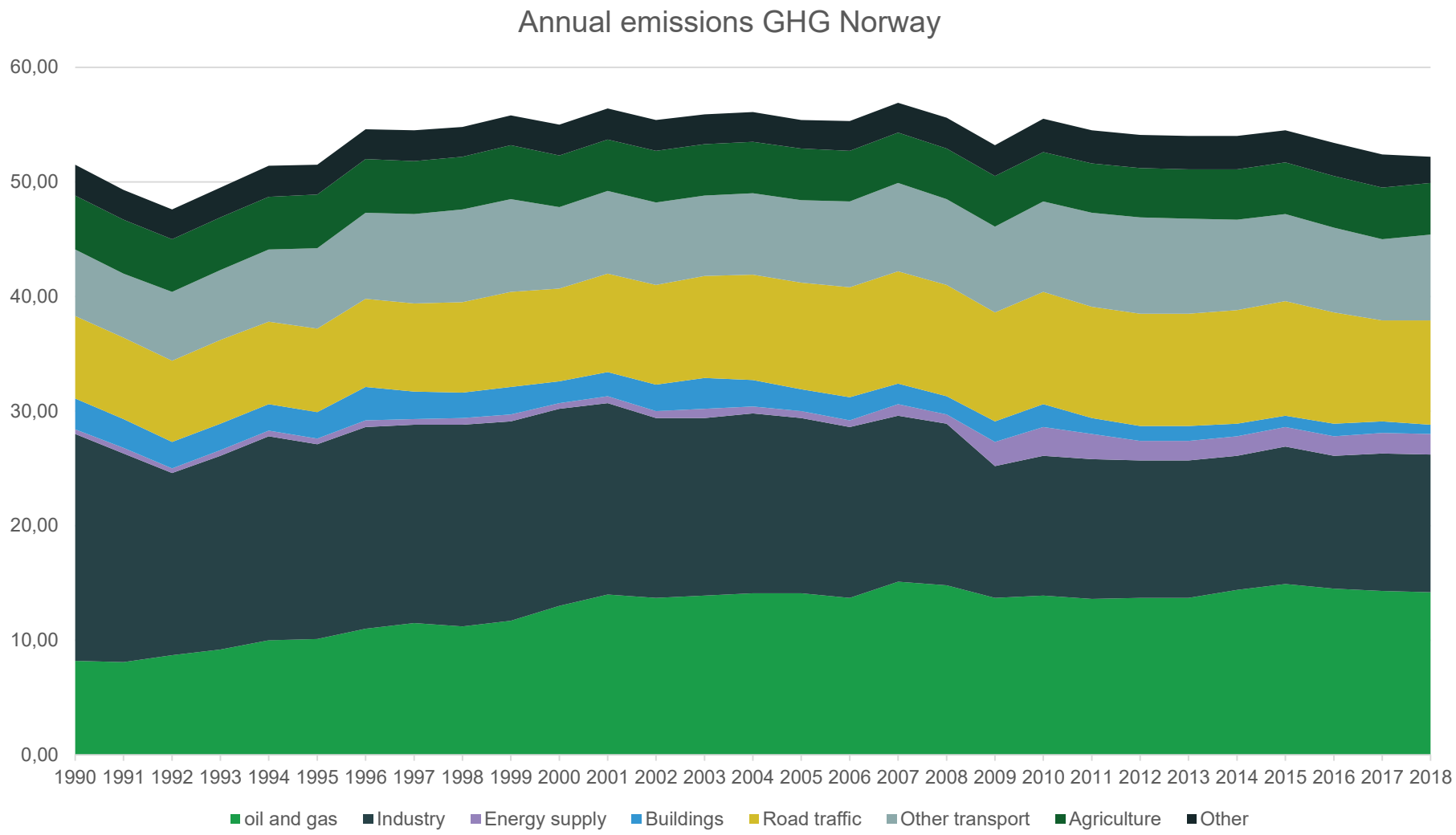
Outline

- Historic emissions
- Commitments
- Domestic ambitions
- Policies
- Conclusion



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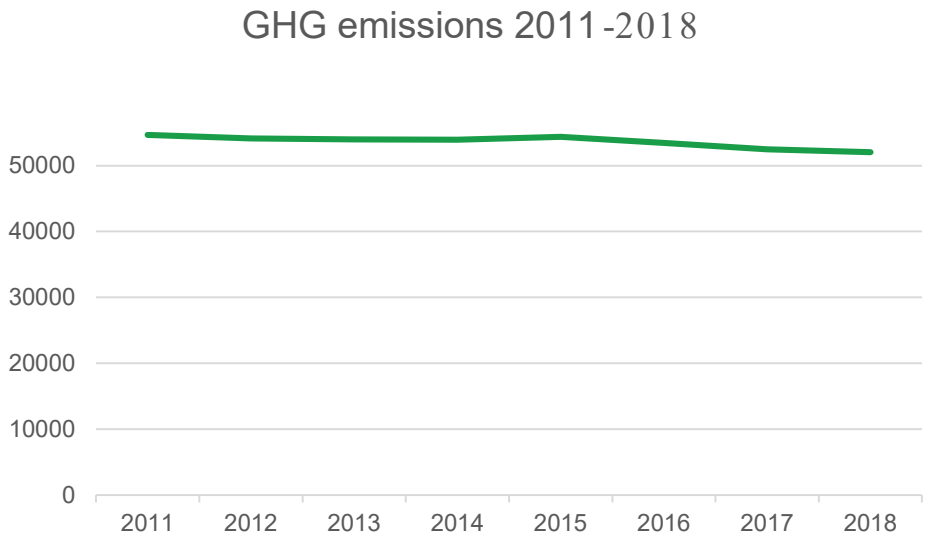

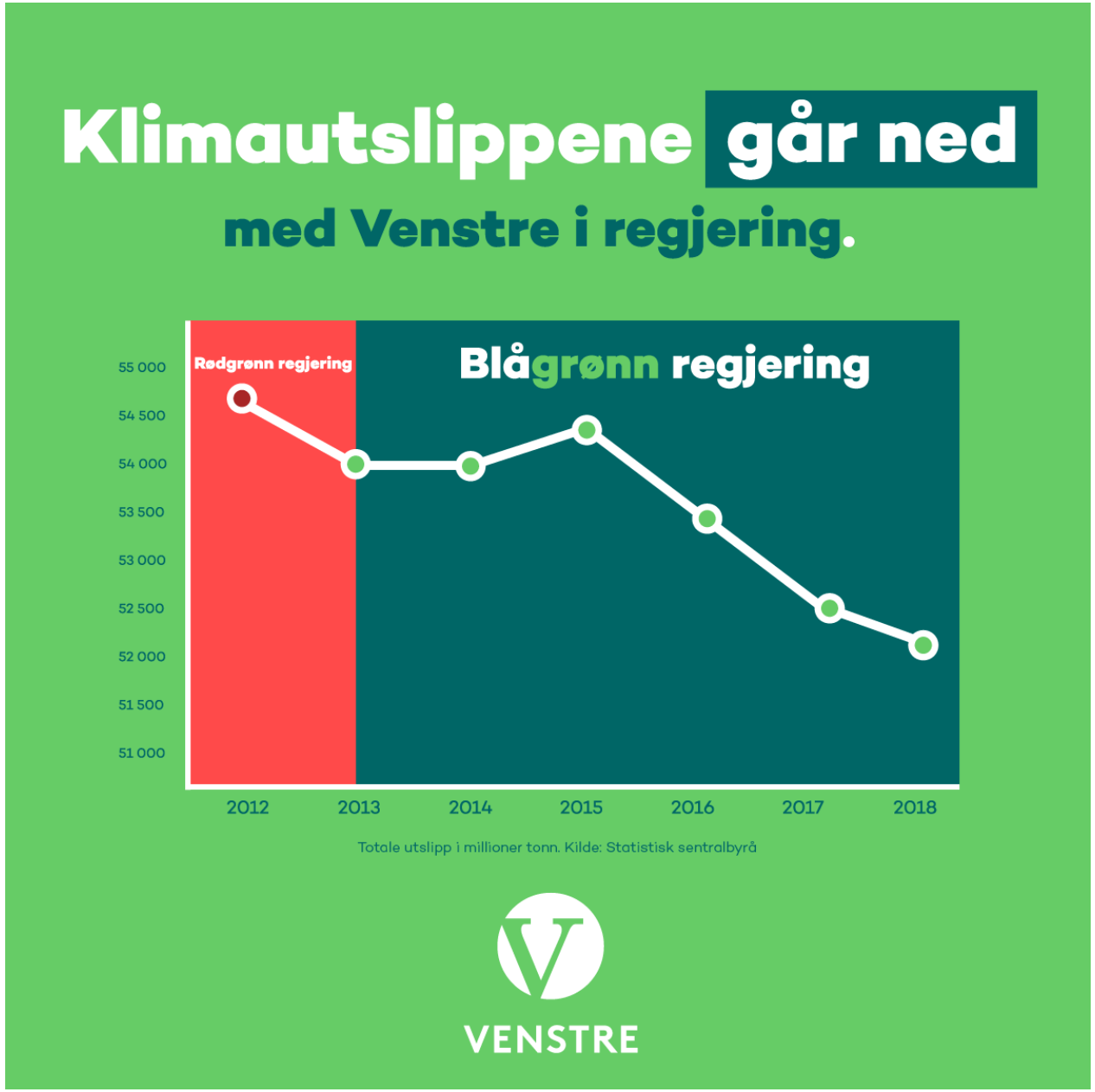

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Kyoto commitments and fulfillments

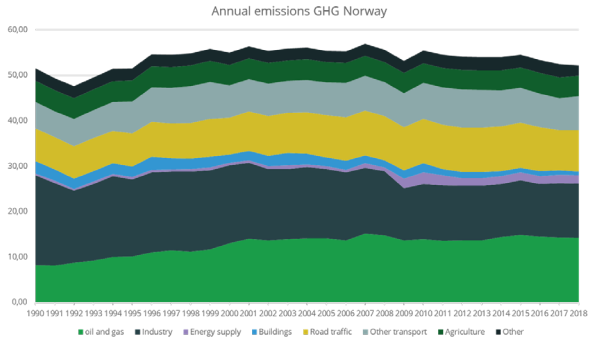
- Kyoto protocol (2008 -2012): 9 % decrease from 1990 (over -fulfillment)
  - Fulfilled by procurement of CERs from CDM (Clean development mechanism).
  - 23 million CERs (4,6 per year)

- Kyoto protocol second commitment period (2013 -2020). 70 % of 1990
  - Fulfill the commitment by EU -ETS and procurement of CERs from CDM (Clean development mechanism)
  - 47 million CERs (5,6 per year)

Paris agreement 2030 , EU ETS and EU effort sharing regulations

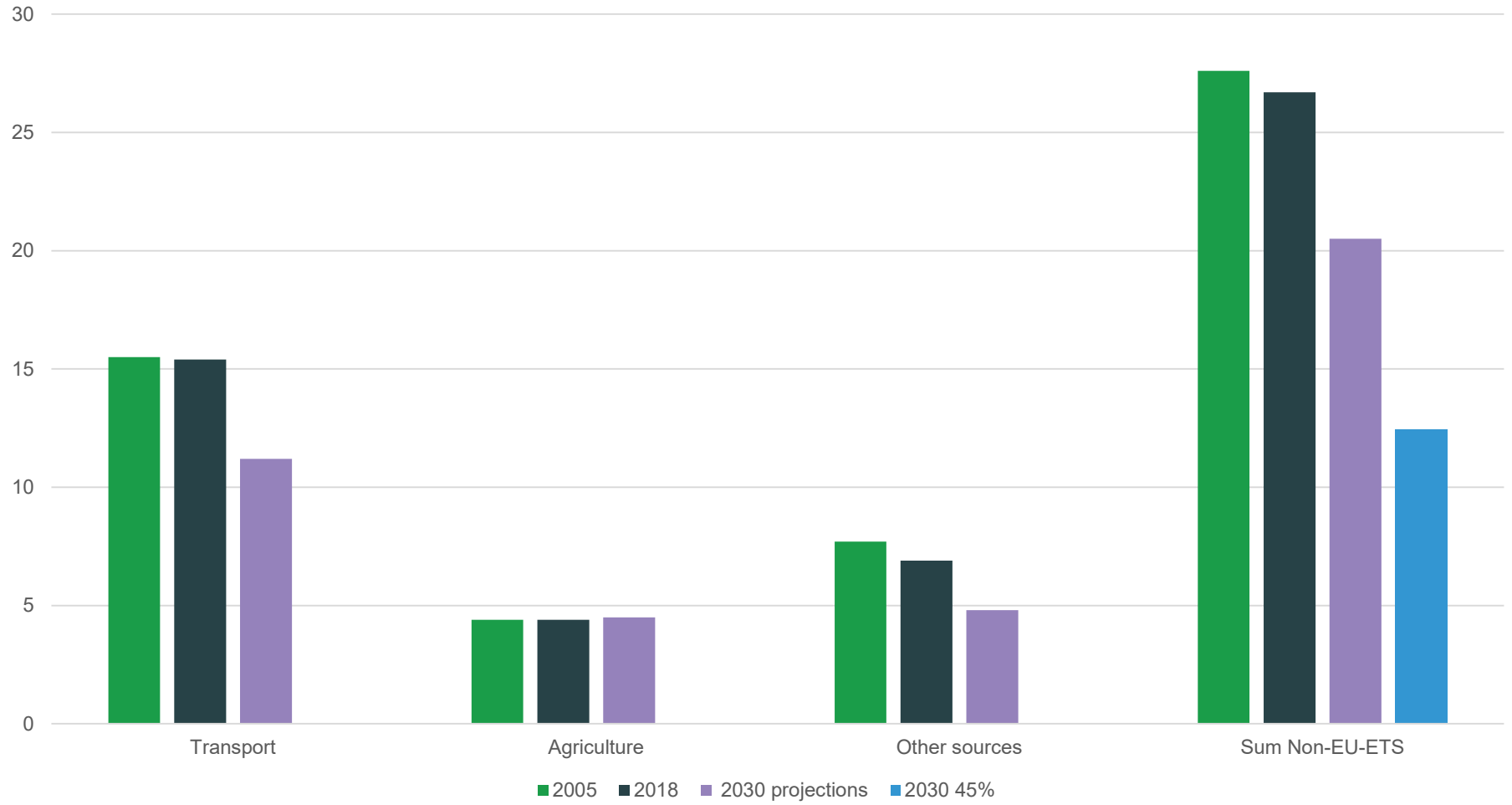
- Norway's Paris obligations. 40 % emission reductions relative to 1990*, jointly with EU*.
- 43 % reduction in EU-ETS sectors (2005-2030).
- 40 % reduction in non-ETS (2005-2030). CDM no longer an option, but flexibility within EU.
- (Aims at increased EU-target of 55% cut by 2030, not (40%))

Domestic ambitions (Granvollerstatement)



- Emissions reductions non -ETS: 45% (not 40%)
- Aim at **domestic** emission reductions of 45 % in non-ETS.
  - KLIMKUR 2030 – identify domestic measures for 50% reduction in non-ETS by 2030
- "Climate neutral" in 2030.
  - REDD pt. 4 €/t CO2
- Low carbon society in 2050 (90-95 % reduction from 1990)

Emissions from non-ETS. Historic GHG emissions, "BaU-projections" and targets. Million tons.



Source: Nationalbudsjettet 2020, Granvcollen erklæringen, 2019

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(New) policies in 2020:

- Small increase in CO2 tax. 5% to 54 €/t CO_2 and remove some tax exemptions.
- Blending mandate for biofuels from 12 to 20 %
- “Agriculture –agreement ” – approx. 10% reduction by 2030
- Aim: By 2025 - All new passenger cars are zero -emission cars.

Norwegian EV policy – More than vague ambitions

- Norway is the world champion!
- Presently, 50% of new passenger cars are EVs.
- Cars are durable assets (15 -20 years). Takes time to penetrate the market.
  - Presently, 7% of the passenger car stock is zero -emission vehicles.
- Only zero–emission new cars in 2025 gives approx. 60 % of the stock in 2030. (Fridstrøm , 2019) – 38 % emission reduction in transportation by 2030 from 2018
- Zero-emissions vehicle are entitled to tax exemptions and special privileges.
  - value added tax exemption (25%), partly emption from road toll and ferry fares, no fuel tax (congestion, local air pollution, accidents, noise and road wear).

EV policy. What is the cost?

- 50 - 150 €/t CO_2 on average 2016 -2030. *Norwegian Environment Agency.*
- 1100 €/t CO_2, but falling over time (*Thema, 2016*).
- 560 €/t CO_2 (*Bjertnæs, 2016*).
- The price will generally fall over time as the production cost decreases and *battery range* increases.

From range anxiety to charging anxiety

Calls for an optimal combination of subsidies on cars (Tax exemption) and investment subsides for fast chargers

Is the Norwegian *domestic* climate policy too weak?

- Cost effectiveness:
  - Reduce domestic emissions to the level where marginal abatement cost equals the permit price (cost of financing abatement abroad.
- Domestic CO_2 taxes in non -ETS: 54€/t CO_2.
  - Domestic CO_2 taxes in agriculture = 0 €/t CO_2.
- Biofuels: 200 €/t CO_2. EVs: 50- 1100 €/t CO_2
- Higher or lower marginal cost than emission reductions in other EU countries?
- Modell simulations non -ETS EU, common price :
  - 0 - 262 €/t CO_2 (Aune and Golombek , 2019, under review).
  - 25 - 158 €/t CO_2 (Bye et al , 2019).

Is the Norwegian *domestic* climate policy too weak? Cont.

- Flexibility (emission trading) reduces cost of achieving tough EU - targets. GOOD for the environment. *Domestic* target is not cost-effective.
- Uncertainty in emission prices calls for a back-up plan (KLIMAKUR 2030)
- EV policy in Norway – very expensive, but something to learn ?
- Investments in R&D&D may pay better off in the long run but risky business

The Norwegian “Moonlanding”
Test-center and full scale CCS at Mongstad. 0,72 billion Euro government spending
Closed 2013.

Hywind Tampen, 2019 - 0,23 billion Euro support from ENOVA

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Conclusions

- Norway aims for tough emission reduction targets ***with*** effort sharing.
  - Aim at increased EU-target of 55% cut by 2030, not (40%).
- The domestic abatement ambition is politically fragile and potentially very costly.
- Norwegian climate objectives – tough targets and weak policies?
- Norwegian climate objectives – probably too tough domestic targets and therefore it is ok with «weak» domestic abatement policies.
- Investment in R&R&D is (perhaps) more important contribution to global emission reductions than domestic abatement targets.

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Thankyou!

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