

Netherlands NCGG Programme

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Switchgear project

Semiconductor project

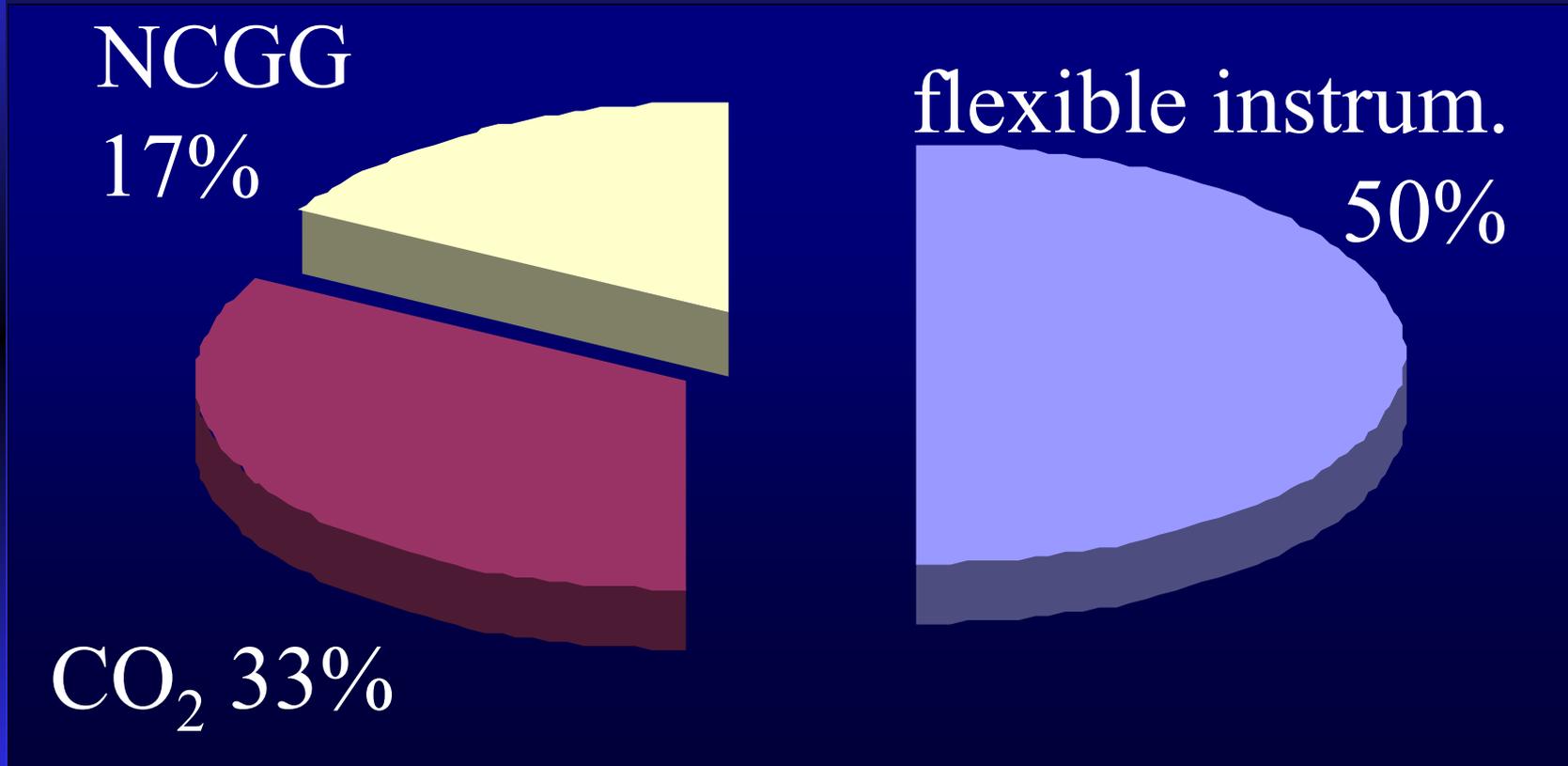
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The Dutch challenge

- Kyoto objective -6%
- Business as usual $+20\%$
- Emission reduction 25%
or 50 Mton CO₂ equivalent

Assigning the efforts



15 NCGG-projects

- CH₄:
agriculture,
landfills, CHP,
oil and gas production

- N₂O:
agriculture, traffic,
fertilizers production

- PFC's , HFC's:
aluminium production,
cooling, foams,
HCFC's, etc.

SF₆:

- Soundproof double
glazing

- Semiconductors

- Switchgear

- (Magnesium casting)

Co-operation with industry

Working groups with three tasks:

- Emission levels, monitoring protocols
- Options, costs and implementation conditions
- Proposal, approval, implementation

Co-operation effects

- Shared information
- Validated presumptions
- Development of measures
- Policy framework common for all projects

Policy framework elements

- Reaching the target is paramount
- Fair distribution
- Freedom, tailor made solutions
- No market distortions
- Clear responsibilities
- Government assistance
- TEWI and no roll-off

Expected results (Mton CO₂ eq.)

- CH₄ : -1,2
- N₂O : -5,5 conditions to be negotiated
- HFK's : -4,4
- PFC's : -1,2
- SF₆ : -0,2

General Dutch Policy approach towards climate change

- All greenhouse gases are equal
- Emission reduction against minimal costs
- No adverse measures
(e.g. higher energy use)

Other EU-countries

- Austria: just reconsidered the intended phasing out F-gases by 2006, exempting GIS
- Denmark: high tax (equivalent to GWP), phasing F-gases by 2006, exempting GIS
- Germany: discussion paper on F-gases considering phasing out SF₆ in mid voltage switchgear

Proposed common EU policy

- Incorporation in ODS Regulation 2037
- Monitoring and reporting
- Leakage prevention
- Recovery, reuse, recycling, regeneration, environmentally safe destruction
- Search for alternatives
- Marketing and use restrictions

Suggestions for use restrictions

Potentially most adequate:

- SF6 in tires
- SF6 in sound proof double glazing
- SF6 in racers

Potentially suitable:

- SF6 in Magnesium casting

Not yet:

- SF6 in switchgear

Dutch switchgear project

- EU consultant recommendation: agreement
- CRF monitoring protocol accepted
- Laboratory, users, producers
- KEMA: best housekeeping
- Users: ceiling, responsible care, sanctions

How to stay beneath the ceiling

- Sealed-for-life mid-voltage gear
- End-of-life recovery/recycling
- Trained maintenance staff
- Lower maintenance frequency, diagnostics
- New gas handling units
- Closing bad installations

International challenges

- Cut SF₆ transport
- Recycling/reuse on site
- New gas handling units
- Handling and storage ventures
- Further need for changing IEC standards to assist reuse/recycling?