

EMISSIONS TRADING IN PRACTICE

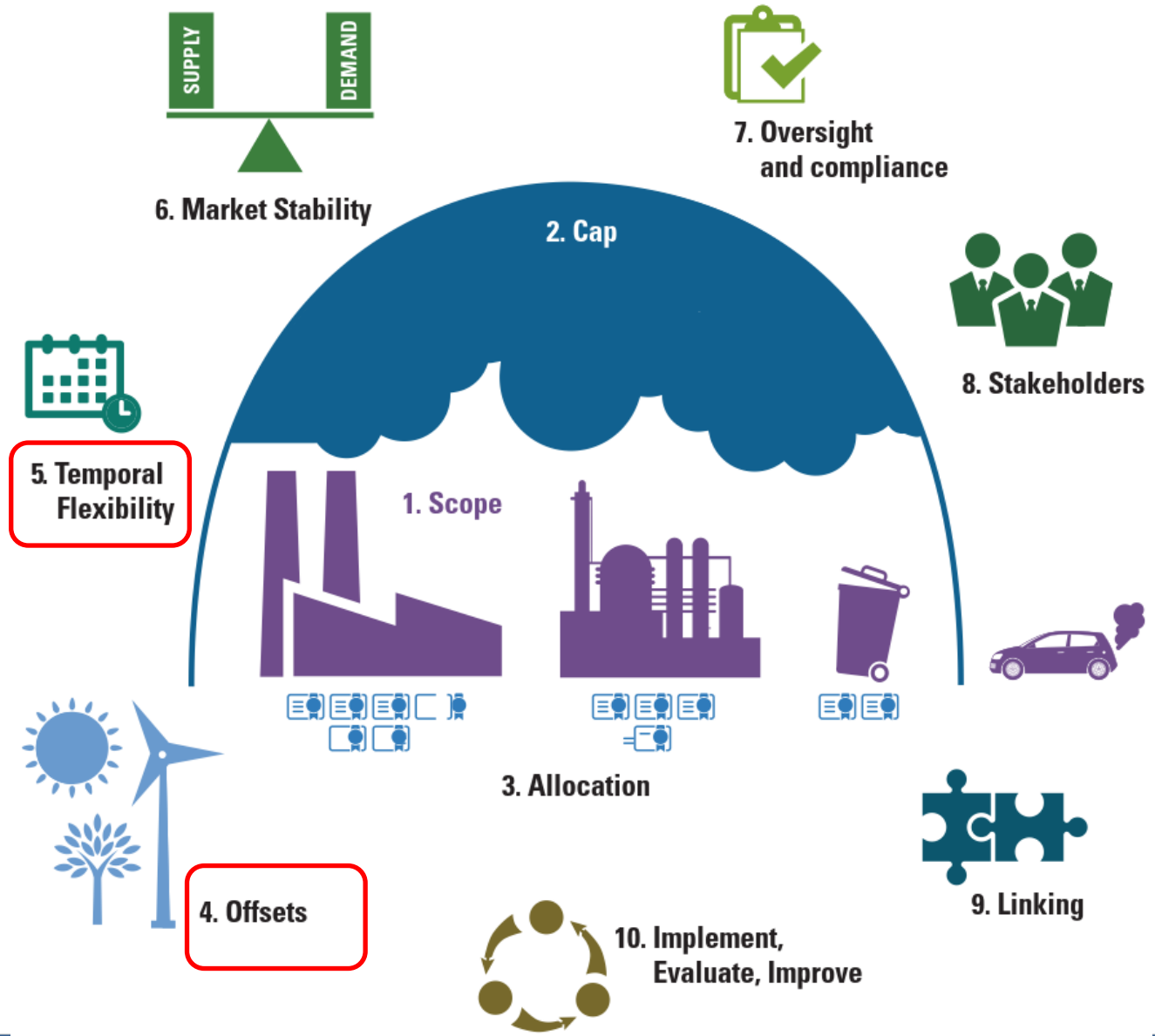
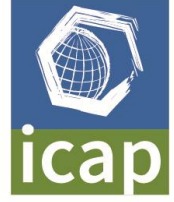
Pasos 4 y 5: Flexibilidad temporal y offsets

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EMISSIONS TRADING
IN PRACTICE:
A HANDBOOK ON DESIGN
AND IMPLEMENTATION

STEP 4: CONSIDER THE USE OF OFFSETS



Step 5: Decide on temporal flexibility

Temporal flexibility lets firms reduce emissions in the most cost-effective way over time.



The rationale for temporal flexibility

- **optimizes abatement costs** over time
- **incentivizes long-term firm-level** investments in clean technologies and provides time for R&D
- may **reduce price volatility**
- in principle - **no significant detrimental effect on the climate**

However: complete flexibility increases policy uncertainty, shortens private planning horizons and incentivizes delaying abatement

What types of temporal flexibility may be included in an ETS?

- Banking and borrowing
- Length of compliance periods
- Financial instruments
- Early reductions

How does temporal flexibility work (1) - banking

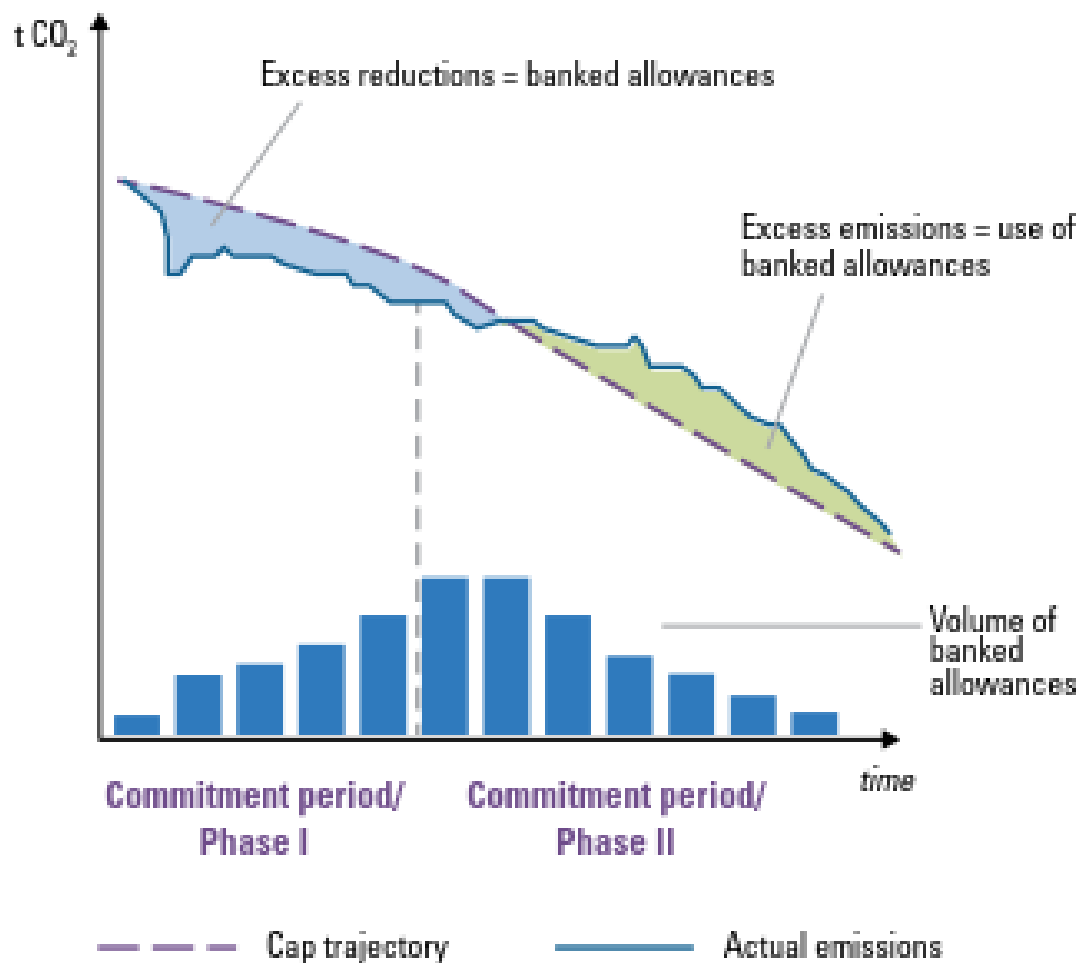
Banking: Allowances from the current compliance period are banked to be used in the future

Objective: Providing flexibility while short-term targets are met

Benefits: facilitates cost-effective abatement, can reduce price volatility by creating additional demand, creates group with vested interest success of ETS & ambitious targets

Challenges: unlimited banking perpetuates underlying supply/demand imbalance

Banking in an ETS over time



How does temporal flexibility work (2) - borrowing

Borrowing: Allowances are borrowed from future compliance periods for surrender in the current period

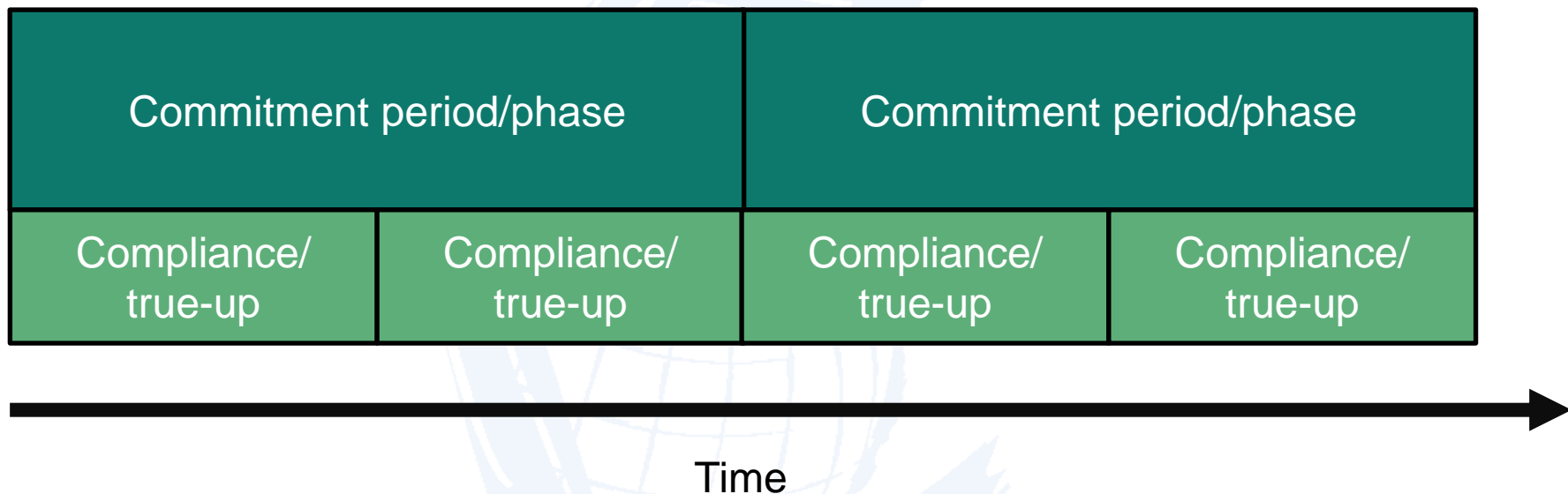
Objective: Allow firms to make long-term investments to enable larger abatement in the future

Benefits: Flexibility to meet targets, can reduce short-term price volatility and market liquidity when allowances are scarce

Challenges: Hard to assess borrower's creditworthiness, adverse selection of debtors, incentive to delay action, uncertainty whether targets met

ETS	Length of commitment period/ Phases	Compliance periods	Banking	Borrowing
EU ETS	2005–07 2008–12 2013–20 2021–30	Annual	Unlimited banking since 2008	No (beyond partial 1-year early access) ^a
New Zealand	1-year period	Annual ^b	Unlimited ^c	No
RGGI	2009–11 2012–14 2015–17	Three years, aligns with phases	Unlimited ^d	No
Tokyo (Japan)	2010–14 2015–19	Five years, aligns with phases	Unlimited across two phases but not multiple phases ^e	No
Waxman-Markey (proposed U.S. Federal) ^f	1-year period	Annual	Unlimited	Unlimited one year; limited up to five years, with interest ^g
California	2013–14 2015–17 2018–20	Aligns with phases + 30 percent annual surrender ^h	Unlimited, with emitter subject to a general holding limit	Limited: <ul style="list-style-type: none"> ▲ In the case of true-up of product-based allocation to match actual production from the previous year ▲ In the case of an entity that is new to the program within a compliance period In the case of untimely surrender at a compliance period compliance event, allowed at a 4:1 ratio ⁱ
Kazakhstan	2013 2014–15 2016–20	Annual	Unlimited, beginning in phase 2	Currently not addressed in the regulation.
Québec	2013–14 2015–17 2018–20	Two to three years, aligns with phases	Unlimited, with emitter subject to a general holding limit	No
Australia ^j	1-year period	Annual	Unlimited	< 5 percent of compliance obligation
Republic of Korea	2015–17 2018–20 2021–25	Annual	Unlimited	< 10 percent within phases ^k

Compliance and commitment periods



Choosing the length of compliance period

Policy makers can provide for temporal flexibility by strategically choosing the length of compliance periods

- Longer compliance periods
 - provide flexibility within the period;
 - reduce administrative costs;
 - allow for cost-effective timing of abatement.
- But similar challenges as with banking and borrowing.
- Mid-period monitoring, reporting and partial compliance requirements on a regular basis might enhance certainty.

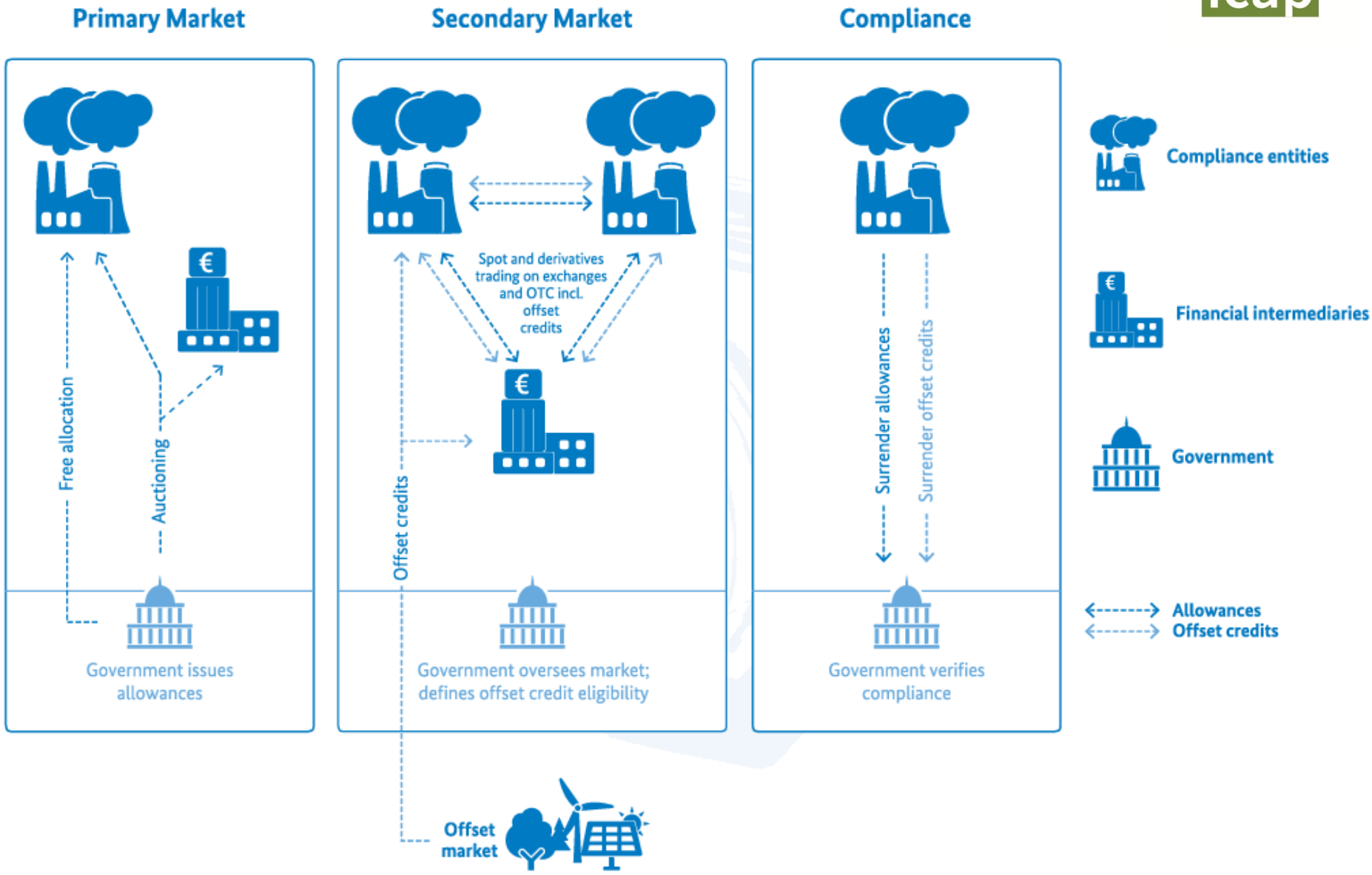
Financial products in secondary carbon markets



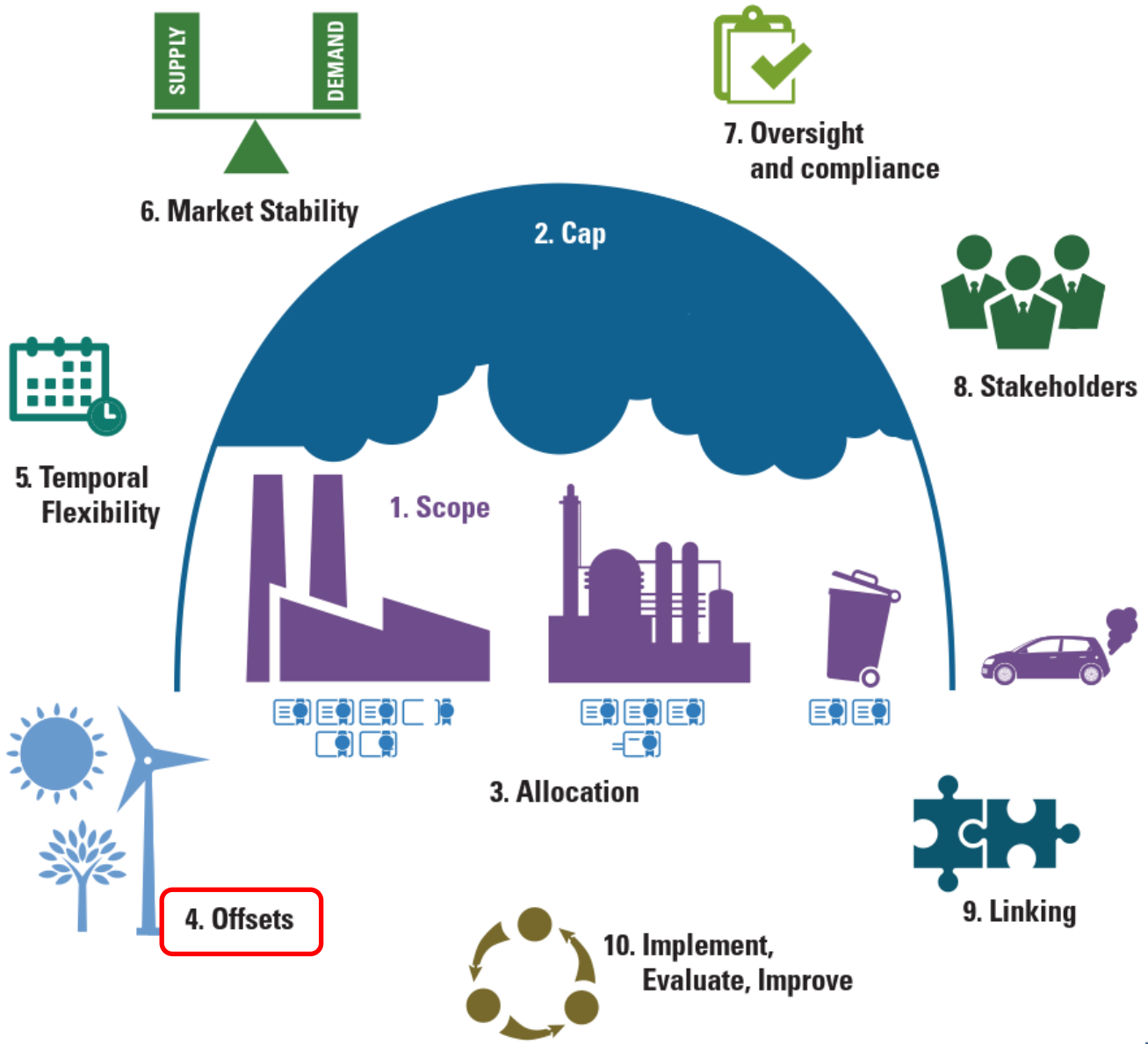
Financial instruments (derivatives) allow entities to better manage risks from fluctuating allowance prices:

- **Future contracts:** standardized agreements with a fixed price on future allowance or offset sales
- **Forward contracts:** individualized agreements upon future allowance or offset sales at a fixed price
- **Options:** right, but not obligation, to buy a fixed quantity for a fixed price at a future date
- **Swaps:** entities agree on a non-standardized exchange of allowances and offsets at a given time

STEP 4: CONSIDER THE USE OF OFFSETS



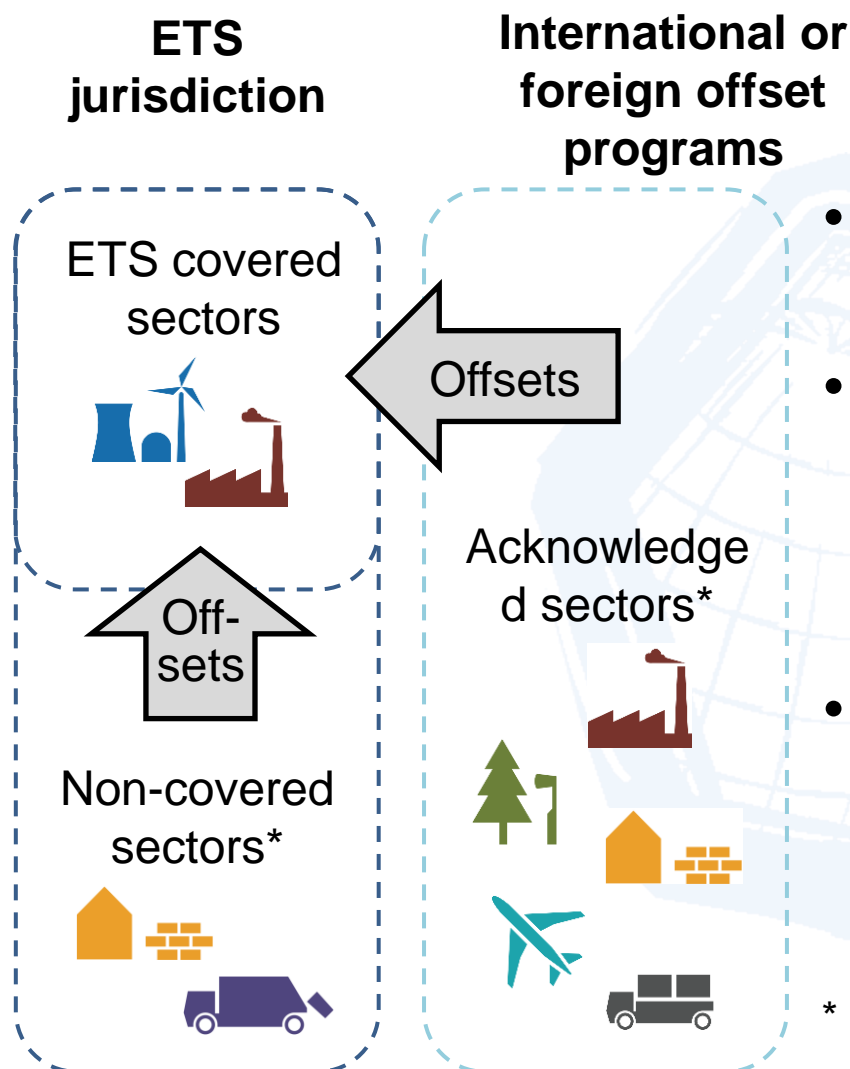
STEP 4: CONSIDER THE USE OF OFFSETS



Offsets provide credit for emission reductions by sources not covered in the ETS.



What are offsets?



- Offsets provide credits from sources not covered by an ETS.
- Emissions within the ETS might exceed the cap but the overall emissions outcome remains constant.
- Can be international (e.g. the Kyoto Protocol flexibility mechanisms) or domestic.

* Sectors need to be eligible for offset crediting

Author: Mehling.

- **As a flexibility mechanism**
 - Cost containment mechanism or achieve a more ambitious cap?
 - Econ theory- “the more you include, the more cost-effective”

- **As a “linking” mechanism (domestic & international/
link to uncovered ETS sectors)**
 - Econ theory- “the more you include, the more cost-effective”...
 - Financial resources for green development in regions where funding is scarce.
 - Reduce emissions in non-ETS sectors, investment flows, innovation, learning

- **As a “use of revenue” mechanism**
 - Clearer in the case of carbon taxes // “Foregone revenue” in a tax, but having the same result as a “earmark” approach

Example: Flexible mechanisms under the Kyoto Protocol

- **Clean Development Mechanism (CDM):** Mitigation projects in developing countries.
- **Joint Implementation (JI):** Mitigation projects in Annex I countries.

-> Eligible to meet Annex I Parties' commitments under the Kyoto Protocol and eligible for compliance of covered entities in some ETS (EU, previously NZL)



Outline

1. What are offsets?
2. Benefits and challenges of using offsets
3. Offset design
4. Implementation and governance

What are benefits and challenges of
allowing offset mechanisms in an ETS?

Benefits of using offsets

- **Cost containment:** Realizing low-cost mitigation opportunities from uncapped sectors
- May allow policy makers to set a **more ambitious cap**
- **Expand abatement incentives and co-benefits** to uncovered sectors
- May facilitate **transition** to market-based mechanisms in uncovered sectors and countries



Challenges of using offsets

- **Lower allowance prices** and less incentives to reduce in covered sectors
- Establishing **additionality**
- **High transaction costs**
- **Reversal:** Offset credits from sequestration projects might have a **non-permanent mitigation effect** only.
- Shifting activities, market and investment **leakage**
- **Distributional issues:** Offsets imply resource transfers to areas outside the ETS or abroad.
- **Subsidy lock-ins:** Offsetting sectors may resist eventual inclusion in ETS.

Outline

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2. Benefits and challenges of using offsets
3. Offset design
4. Implementation and governance

What are some key considerations when designing an offset?



Objectives of offset design

1. Ensure additionality and avoid double-counting
2. Match potential supply to expected offset demand
3. Consider compatibility with potential linking partners
4. Align with overall ETS objectives and support policy priorities

Key considerations: Geographic coverage

Domestic system

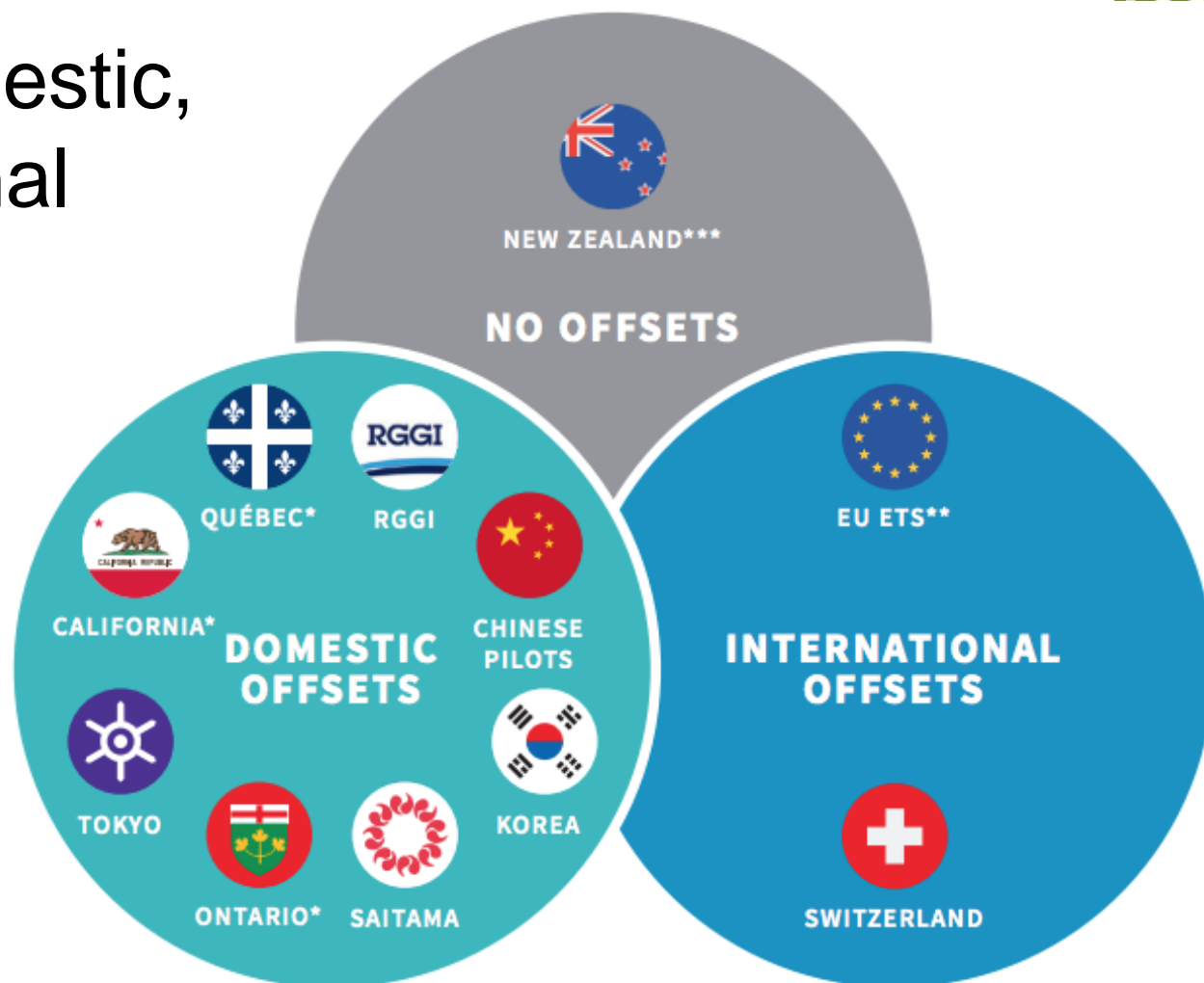
- Attractive where **domestic emissions reductions** are key priority
- Keeps **co-benefits** of mitigation in the jurisdiction
- May **reduce MRV and compliance concerns**

International system

- **Expands supply** and offers more low-cost abatement options
- Aids **international cooperation**, provides carbon finance to specific regions, countries or sectors
- Potentially **greater concerns with ensuring environmental integrity**



Origin: domestic, international



*California, Québec and Ontario allow offsets mutually sourced from linked jurisdictions

**The EU ETS plans to no longer use offsets in Phase IV starting from 2020

***Up until June 2015, New Zealand allowed the unlimited use of international offsets.

Key considerations: What should be covered?



Include sectors, industries, gases where activities have:

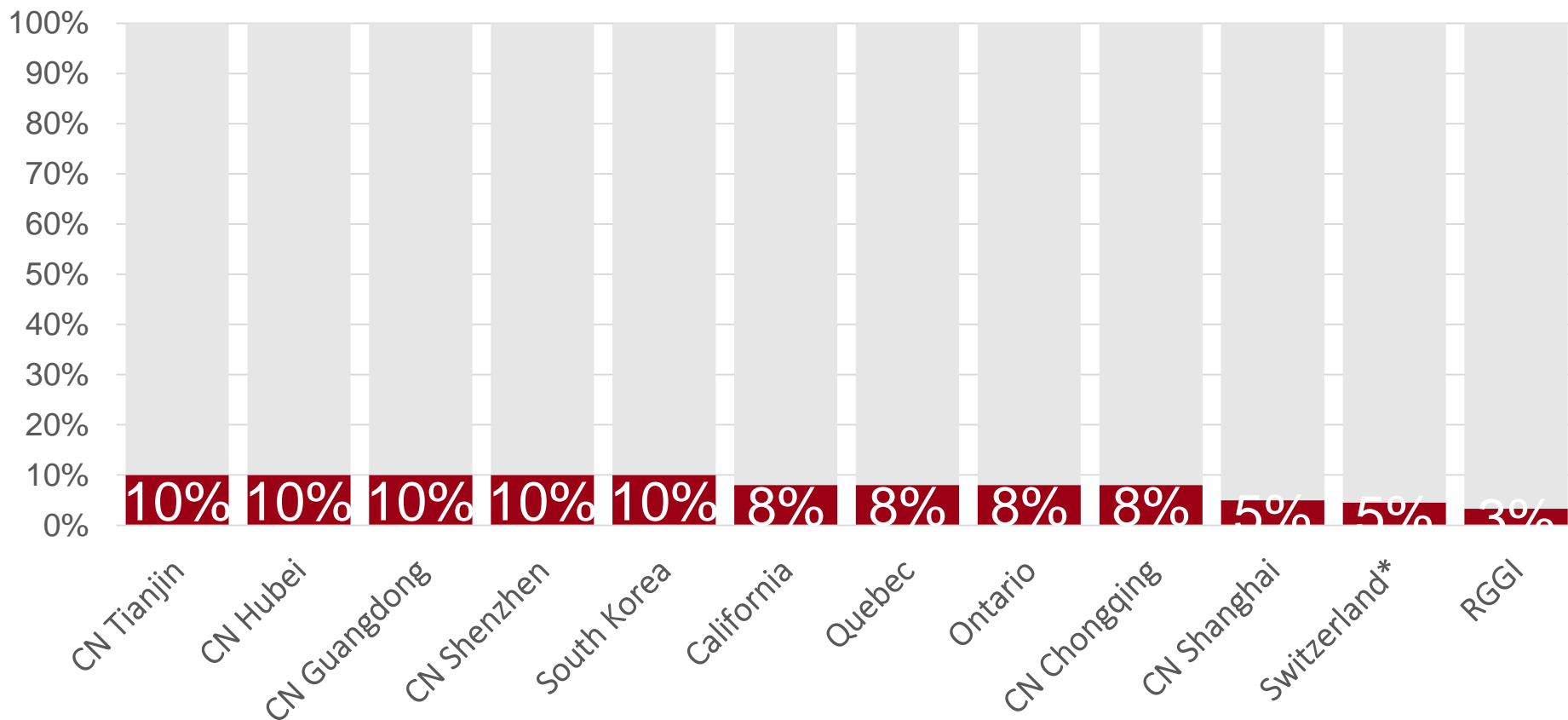
- Mitigation potential
- Low mitigation and transaction costs
- Limited leakage and non-additionality risks
- Environmental and social co-benefits
- Potentially encourage investments in new technologies

Tailoring offset use

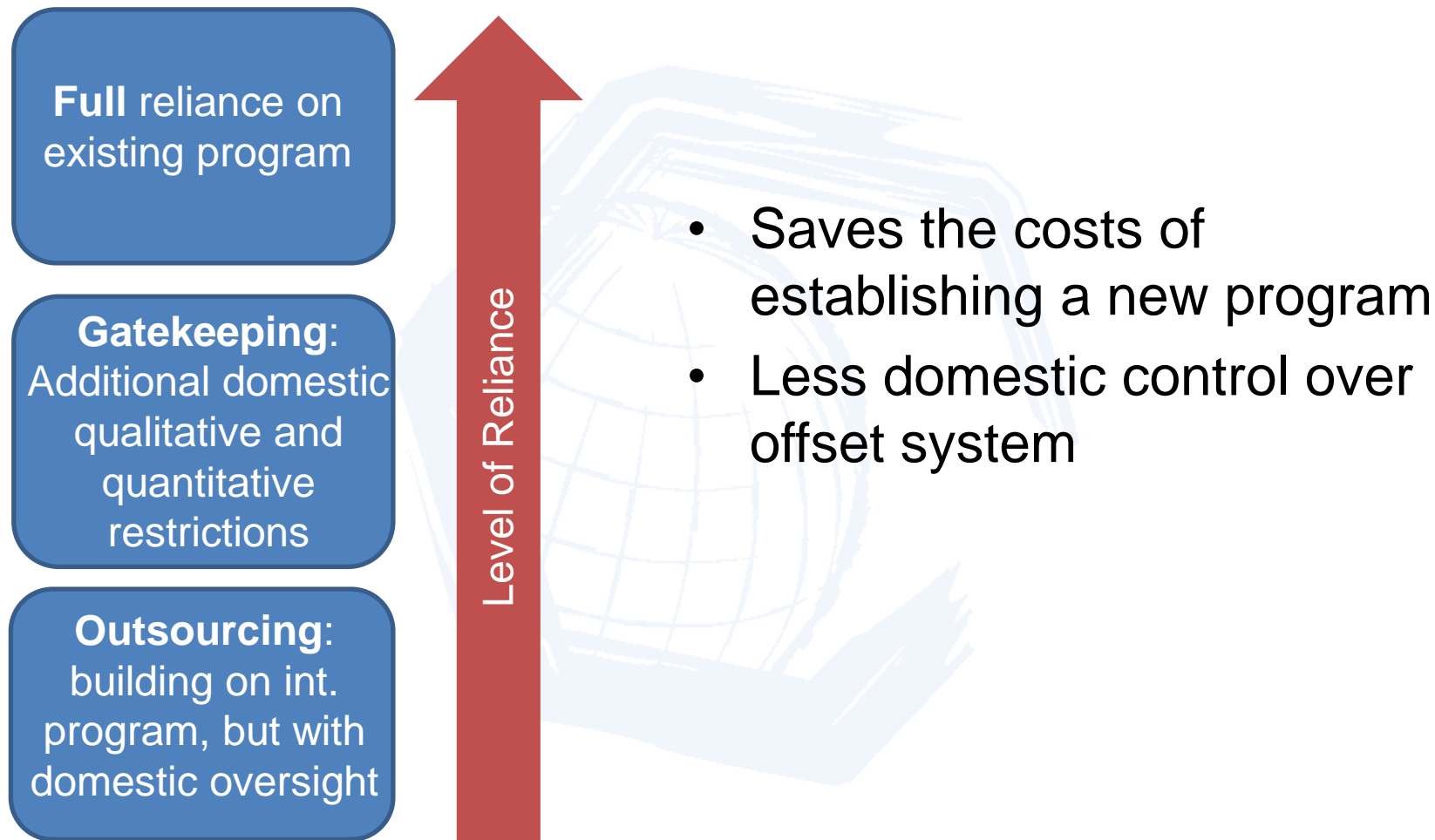


- **Qualitative limits** on types of credits allow targeting priority areas
- **Quantitative limits** ensure a certain level of abatement in covered sectors
- **Early action credits** rewards early movers and the move away from locking in high-emissions technologies

Quantitative restrictions: ensure a certain level of abatement in ETS



Option 1: Connect to existing offset program



Option 2: Create new offset program

-> More costly to establish, but may enable closer alignment with domestic policy goals

Standardized methodologies:

Upfront effort/costs for establishment, but streamlined approval process

vs.

Project-by-project assessment

More precise, but costlier determination, higher uncertainty for project developers

Top-down methodology development

More upfront effort from regulator, more selective coverage

vs.

Bottom-up methodology development

Potentially quicker start, but higher cost & uncertainty for project developers

Outline

1. What are offsets?
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What is involved in the process of implementing
and governing offset mechanisms?

A large, faint, light blue graphic in the background of the slide. It consists of a globe with a grid of latitude and longitude lines, enclosed within a thick, hand-drawn style blue outline that resembles a hexagonal or octagonal frame.

Liability issues

- Some offset programs might not obtain their desired mitigation effect
 - Offset projects do not meet required standards
 - Mitigation effects of offset projects are being reversed
- Policy makers need to assess whether they want to establish **seller or buyer liability** when required standards of offset projects have not been met.
- **Buffers, reserve accounts** and private or governmental **contingency insurances** can reduce the risks invoked by reversals.

Conclusion

- Offset expands abatement options in the market, possibly unlocking cheaper abatement options
- Offsets can generate environmental and social co-benefits
- Must ensure environmental integrity of offsets and maintain abatement incentive within the ETS
- Qualitative and quantitative limits allow for targeting the desired offset type and extent of use

Thank you for your attention!

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The ETS handbook slide decks were developed with financing from the Swiss Federal Office for the Environment (FOEN).

Qualitative

Quantitative

**1st phase
(2005-2007)**

**2nd phase
(2008-2012)**

**3rd phase
(2013-2020)**

Use of CDM and JI,
no credits from
LULUCF and nuclear
power

Newly generated international
credits (post 2012) only from LDCs.

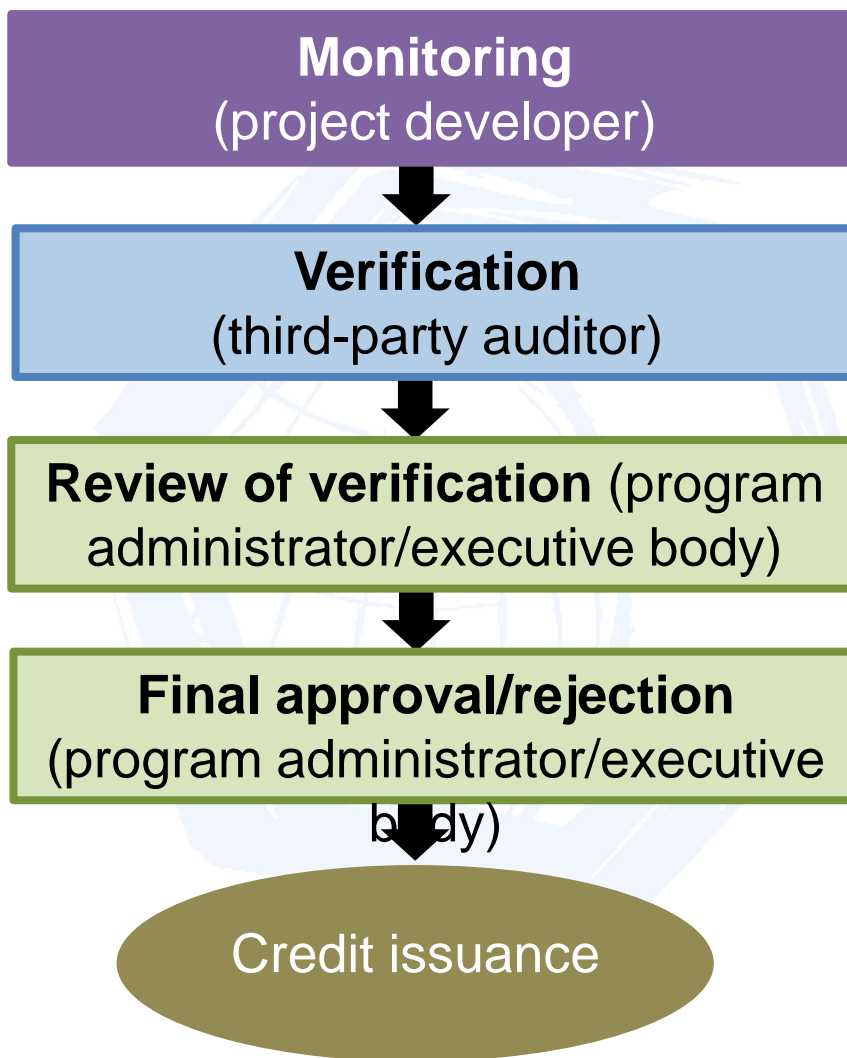
Projects from Industrial gas credits
excluded.

CDM and JI credits up
to certain percentage
limit, MS NAPs

Unused entitlements transferred to
Phase III

The total use for Phase II & III may amount up to 50% of the
overall reduction under the EU ETS in that period (approximately
1.6 billion tons CO₂e).

Offset credit issuance



* Dashed lines indicate steps that skipped by some offset programs