PCAF North America Methodology Launch

Assessing and disclosing GHG emissions of loans and investments in order to align with the Paris Agreement

October 28, 2019

PCAF Partnership for Carbon Accounting Financials

AGENDA

- What is PCAF?
- Overview of the PCAF North America methodology
- PCAF emission factor database
- Case study: Residential mortgages
  Applying the methodology
- Case study: Auto loans
  Creating programs for customers and communicating efforts
- Q&A

PCAF Partnership for Carbon Accounting Financials

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Initiative of:

amalgamated bank

ABN·AMRO

asn bank

global alliance for banking on values

Triodos Bank

Supporting partner:

NAVIGANT

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Mission: assessing and disclosing GHG emissions of loans & investments to enable transparency & alignment

Article 2 of Paris Climate Agreement
Para 1

(a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to **limit the temperature increase to 1.5 °C above pre-industrial levels**, recognizing that this would significantly reduce the risks and impacts of climate change;

(c) **Making finance flows consistent with a pathway towards low greenhouse gas emissions** and climate-resilient development.

- Banks represent most of the available capital globally
- Since the Paris Climate Agreement the largest banks have still invested nearly $2 trillion into the fossil fuel sector
- Investors (e.g., pension funds/asset owners and managers) also play an important role in the financial eco-system to drive change and transition towards a low-carbon economy
- PCAF is an open source methodology to measure financed emissions, helping to address the challenges of meeting the Paris Agreement through GHG measurement and management

Current state of Carbon Accounting Financials: Scaling Up

From Netherlands

- Platform Carbon Accounting Financials, established end of 2015
- Led by ASN Bank
- Transparent, low cost methods for 8 asset classes
- Connected to SBTi
- Now 18 FIs (banks, pension funds, asset managers, insurance etc.) participating

To North America

- Established in 2018
- Led by Amalgamated Bank
- Transparent, low cost methods for North America
- Connected to SBTi
- Already 12 FIs (banks, credit unions, DFIs) participating

To Global

- Launched in September 2019
- Led by Amalgamated Bank, ABN Amro, Triodos Bank, ASN Bank and GABV
- To have over 100 FIs participating, of which already 50 FIs* have committed

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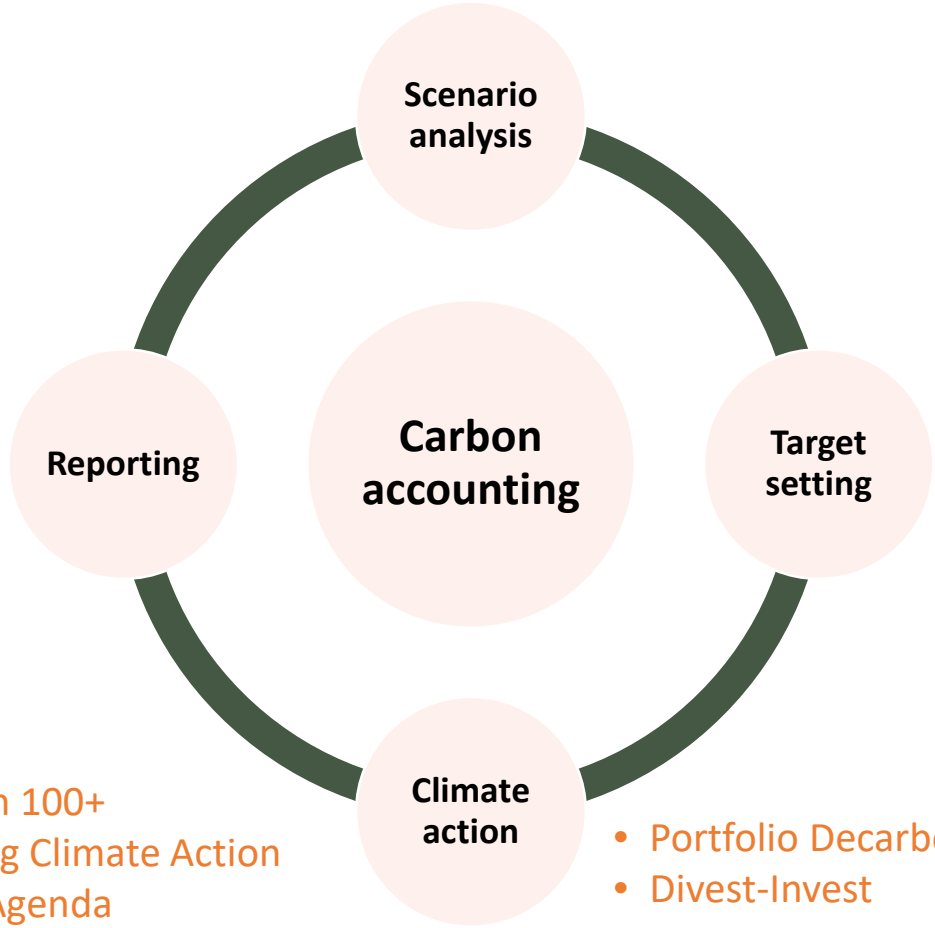
Carbon accounting is the foundation for alignment with the Paris Climate Agreement, but is also relevant for other initiatives

- TCFD
- China-UK and UNEP FI TCFD pilots
- Fiduciary Duty



- TCFD
- CDP Financial Service questionnaire
- Asset Owners Disclosure Project (AODP)

- SBTi-FI, alignment with Paris Agreement

- Climate Action 100+
- Mainstreaming Climate Action
- The Investor Agenda

- Portfolio Decarbonization Coalition (PDC)
- Divest-Invest

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Organizational Structure

Global Team

Steering Committee	Core Team
Responsible for achieving the objectives and for global operational strategy and management. Global Steering Committee with CEOs from initiating organizations (Amalgamated Bank, ABN Amro, Triodos Bank, ASN Bank and GABV) and FIs from the other regions.	Drafts and delivering the global carbon accounting standard. Global core team consisting of 20-25 experts from 10-15 participating banks and investors.

Implementation Teams

- **Europe**
- **North America**
- **Latin America**
- **Asia**
- **Africa**

Support the implementation of carbon accounting and share experiences and lesson learned.

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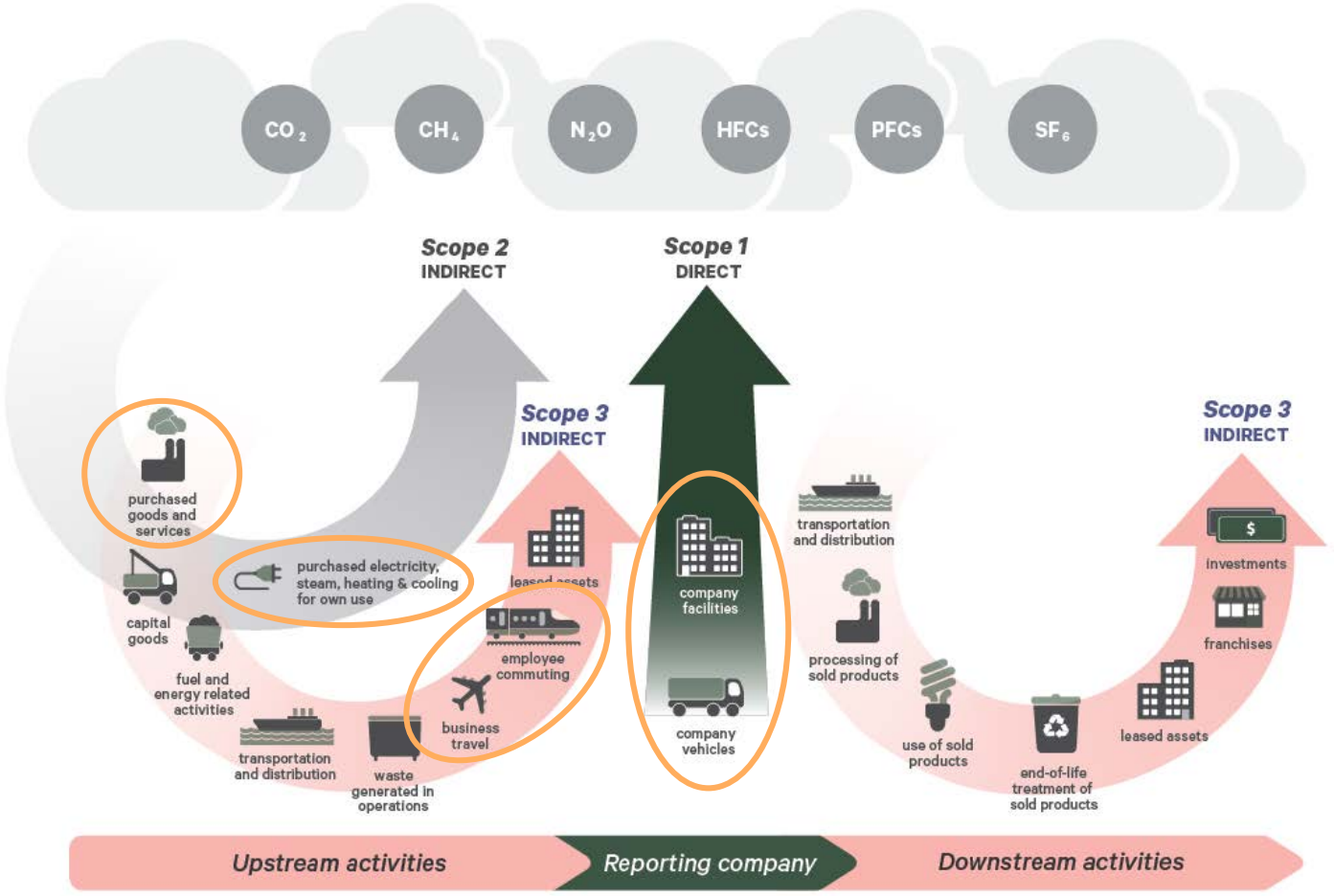
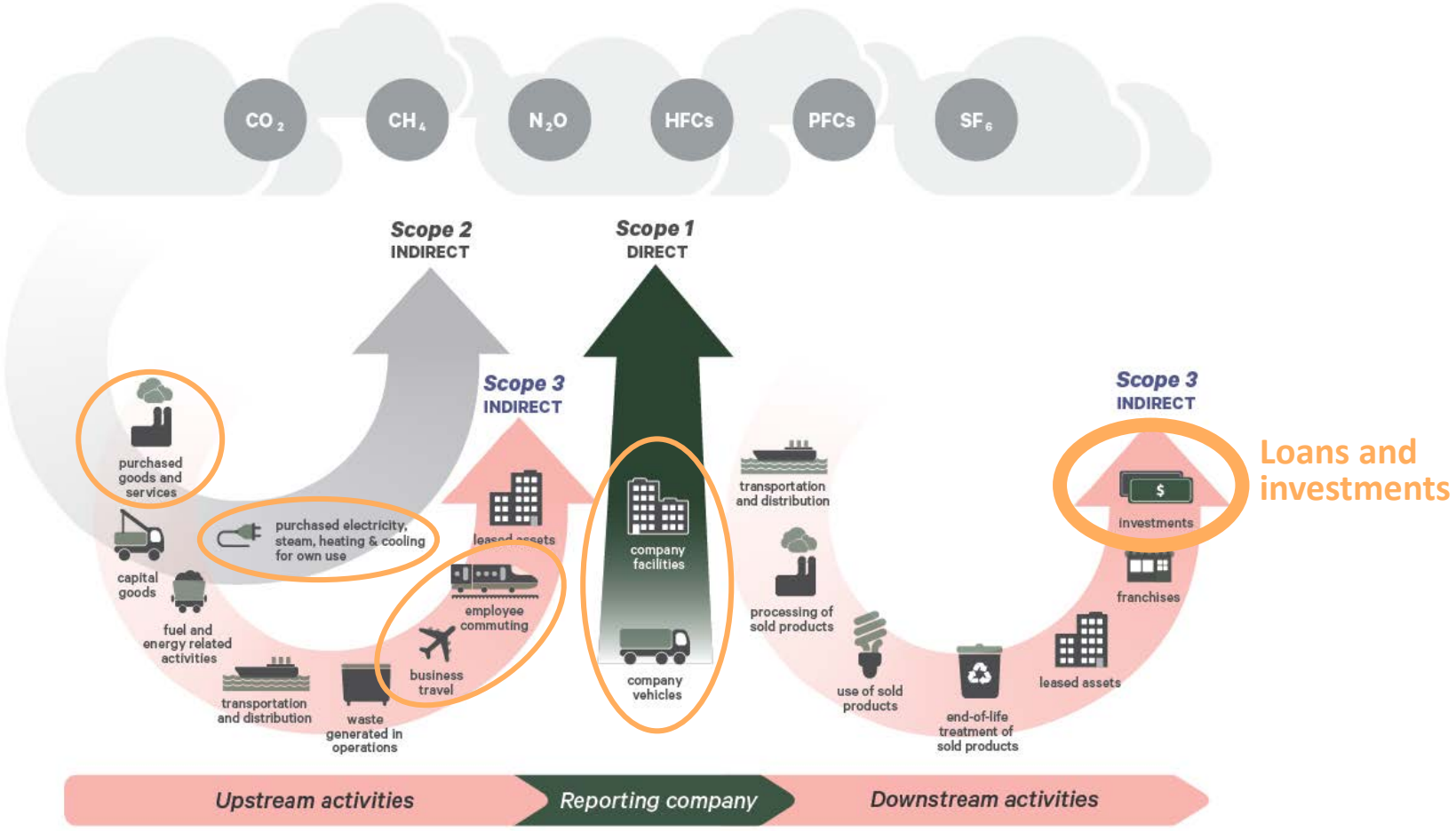
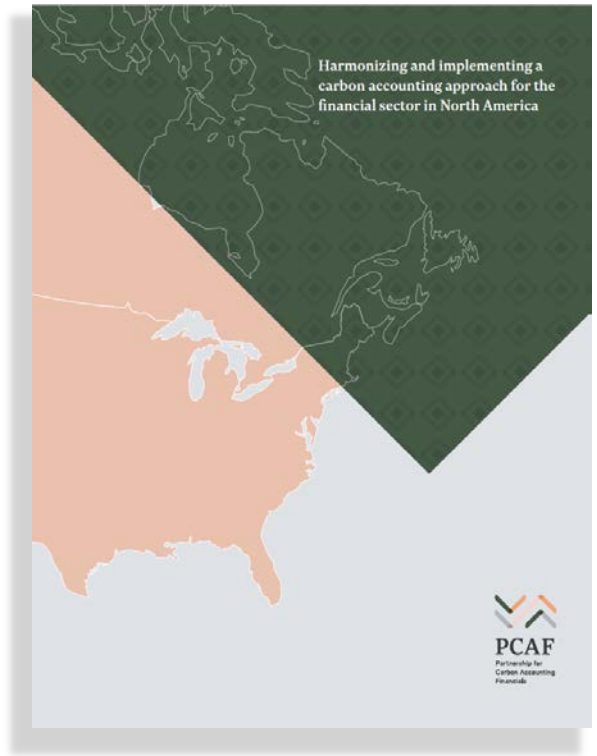
Most financial institutions currently address the emissions sources circled below



Source: GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard

PCAF developed a methodology to focus on loans and investment of financial institutions, where most impact lies





Source: GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard

Core Team:

Ivan Frishberg, First Vice President, Sustainability Banking
William Peterson, Chief Credit Officer

Erin Kilmer Neel, Executive Director + Chief Impact Officer
Maria Kei Oldiges, Social and Environmental Impact Analyst

Keith Bisson, President

Jason Kolberg, Director of Enterprise Risk Management and Data Management
Paul Herendeen, Director of Impact Market Development

Melissa Malkin-Weber, Sustainability Coordinator

Jo Westwood, Impact Metrics Manager
Wesley Phillips, Sr. Analyst Insights – Impact Metrics

Simeon Chapin, Community Impact Officer

Sounding Board:

Ben Janzen, Director, Values Integration at Kindred Credit Union
Ryan Bjorkquist, Director, Environmental and Social Risk at MUFG Union Bank N.A.

Supporting partner:

PCAF North America covers six asset classes, with the opportunity to add other asset classes as the PCAF continues to expand

PCAF Netherlands	PCAF North America
Mortgages →	Mortgages
Commercial Real Estate →	Commercial Real Estate
Corporate/SME Loans →	Business Loans
Listed equity →	Listed equity
Project Finance →	Energy Finance
Sovereign Bonds	Motor Vehicle Loans *(new)*
Corporate Debt: Bonds	
Indirect Investments	

→ More asset classes may be added as the initiative grows

Emissions are calculated by multiplying the attribution share by the emissions associated with that loan or investment

Portfolio emissions

$$= \sum_i \text{Attribution share in investee}_i \quad x \quad \text{Emissions of investee}_i$$

(with i = investee)

$$\frac{\text{Investment}_i}{\text{Investee equity}_i + \text{Investee debt}_i}$$

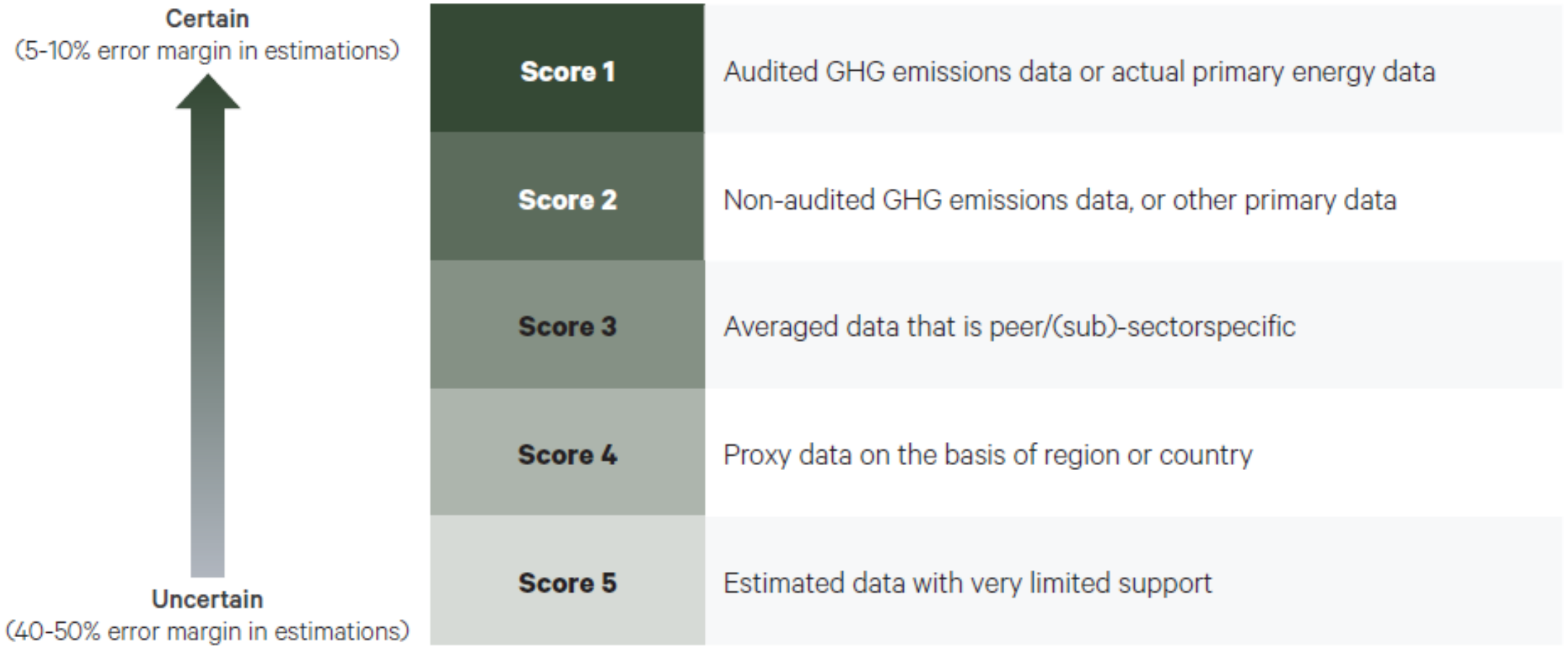
1. Reported Emissions$_i$
2. Physical Activity Data$_i$ x Emission Factor
3. Economic Activity Data$_i$ x Emission Factor

Hierarchy of preference

An emission factor is the average emission rate of a given GHG for a given source, per unit of activity.[1]

1. https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/greenhouse-gas-data-unfccc/definitions

PCAF provides data scores to identify where and how to improve the accuracy of the carbon footprint



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PCAF is developing an emission factor database that provides factors to calculate the carbon footprint of loans and investments

Geographies
1. Europe 2. North America 3. Latin America 4. Asia-Pacific 5. Africa Where possible, the regions will be broken out by country, state and province

Asset classes
Equity: 1. Listed Equity **Debt:** 2. Business Loans 3. Mortgages 4. Commercial Real Estate 5. Motor Vehicle Loans **Equity & debt (Mix):** 6. Project finance

The draft emission factor database is expected to be completed Mid-2020

Example calculating the carbon footprint using the emission factor database (I)

- A theoretical bank has a residential single family home mortgage portfolio in Germany of €2.5 billion portfolio that includes 10,000 single family homes

- What is the carbon footprint associated with these mortgage loans?

- Formula to calculate the carbon footprint:

Single Family Home emissions

$$= \sum_{i} \text{Attribution share in investee}_i \quad x \quad \text{Emissions of investee}_i$$

- Attribution Share: Assume the bank is the sole financer of the loan (i.e. attribution is 100%)
- Emissions of Investee: Check PCAF emission factor database

Example calculating the carbon footprint using the emission factor database (II)

- Using the emission factor database the total emissions are 6.232 tCO_2e per single family home

Single Family Home emissions

$$Attribution\ x\ Emission\ Factor\ per\ Single\ Family\ Home\ x\ Number\ of\ homes$$

$$= 100\%\ x\ 6.232\ \frac{tCO_2e}{home}\ \ x\ 10{,}000\ homes$$

$$= 62{,}320\ tCO_2e$$

- The accuracy of the carbon footprint can be improved by:
  - Collecting more data about the mortgage loans to apply a more granular the emission factors
  - Working with the local utility to get energy consumption data

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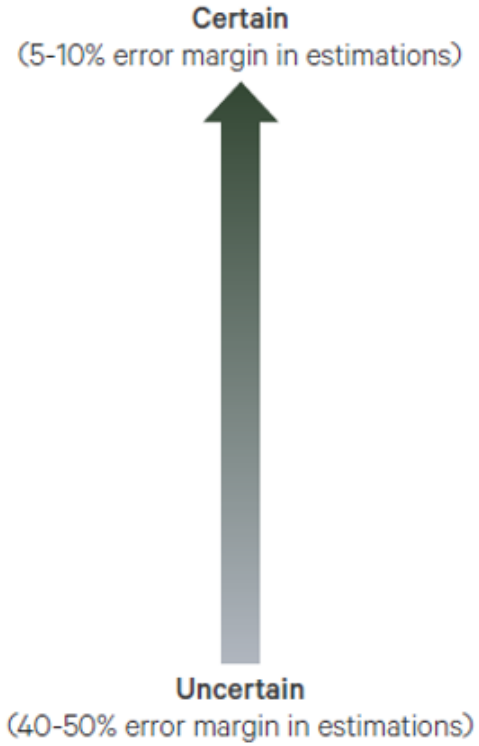
Residential Mortgages

Any lending used to purchase residential property, including multifamily properties between two and four units.

- One of the largest and most straightforward asset classes.
- Low barrier to produce initial figures.
- 100% attribution of emissions.

Residential Mortgage Data Quality



Data Quality (Highest to Lowest)	Description
1	Actual energy consumption, converted to CO_2e emissions using verified emission factors specific to the type of energy consumed.
2	Actual energy consumption, converted to CO_2e emissions using emission factors for energy from undefined fuel source.
3	Average, actual energy consumption per postal code regions, converted to CO_2e-emissions using general grid emission factors by specific geographic regions; or, Average energy consumption by home type (attached home, apartment, etc.) and square footage, converted to CO_2e emissions using emission factors for energy from undefined fuel source.
4	Average energy consumption by home type, converted to CO_2e using general grid emission factors by state or province.
5	Average energy consumption by home type, converted to CO_2e using general grid emission factors for the country.

Vancity's preliminary mortgage portfolio emissions

- Emissions for Vancity's single family detached home (SFDH) mortgage portfolio is calculated by:

$$Total\ SFDH\ Emissions\ in\ BC\ x\ \frac{\#\ of\ Vancity\ SFDH\ Collaterals}{\#\ of\ SFDH}$$

Sources: NRCAN Data and Vancity Data

Home Type	**ktCO2e**
Single Detached	61.14
Single Attached	11.98
Apartment	9.07
Total ktCO2e	82.18

Home Type	**ktCO2e/Thousand $**
Single Detached	7.17
Single Attached	7.47
Apartment	5.79
Average ktCO2e/Thousand $	6.91

Mortgage Portfolio Coverage	96.47%

- This process was repeated for the other home types.
- Data quality can be improved by collecting information, such as the age of home and the size of the home.

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For Your Portfolio

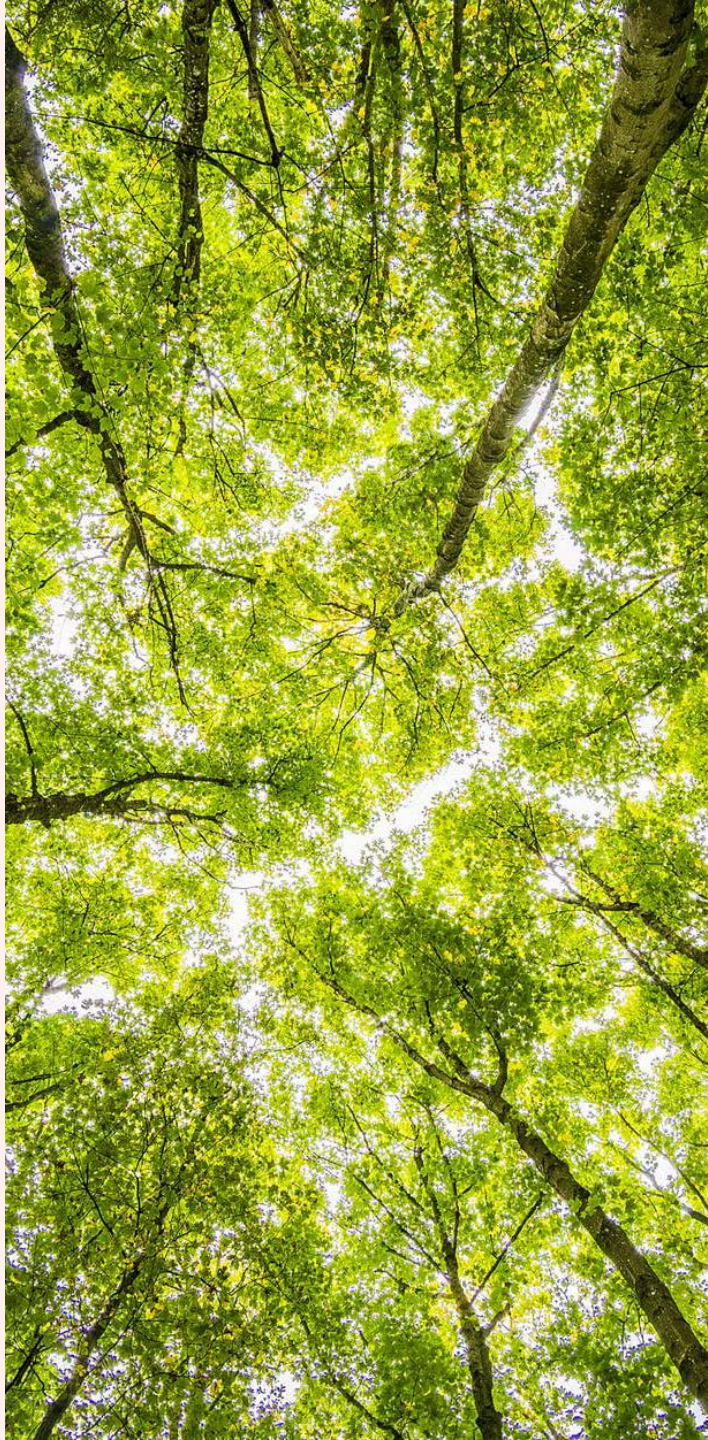
There is flexibility in the methodology so you can calculate emissions with the data you have.

- The result is most important, how you get there is negotiable.
- Start where you can and look to improve.
- Use sample calculations as guides, not prescriptions.

Data quality score can be improved over time, anything is better than nothing.

The methodology itself is living, and open to improvements.

Navigant is here to help source external emissions data. Use their resources to help you get started.



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Motor Vehicles (New)

Transportation accounts for over a quarter of total US emissions in 2017.[1]

- Straightforward
- Industry data is good; bank data is quite varied
- 100% attribution

1. https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

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Beneficial State Portfolio Stats & Lessons Learned

- 8,000 vehicles | $78 million
- Vast majority are used vehicles
- Credit-challenged borrowers
- Data availability and cleanliness:
  - Make, Model, Year on over 90%
  - Customer address
  - Data entry, misspelling
  - VIN # can be key for ongoing analysis
- Easy to develop carbon footprints using loan data and Navigant Emission Factor Database

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Beneficial State Portfolio Stats & Lessons Learned

- Emissions from motor vehicles in our portfolio range from 0 to 1,000 grams CO_2 per mile driven

- PCAF gave us insight into the emissions of motor vehicles in our portfolio to set emissions targets:
  - Clean vehicles with emissions of 0.25 kg/yr-$ account for 1.1% of portfolio
  - The remainder of our motor vehicle portfolio has emissions of 0.62 kg/yr-$

- Beneficial State has set target to encourage clean vehicle purchases through
  - Grants
  - Interest rate / fee / term incentives
  - Dealer incentives
  - Marketing

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clean vehicle
assistance program

Clean Vehicle Assistance Program

- Grants of $2500-$5000 for low income Californians to purchase low- and zero-emissions vehicles
- Max interest rate of 8% where market rates are as high as 20%
- Benefits of being a bank in this program
  - Dealer relationships
  - Customer relationships
  - Marketing
  - Loan Origination System

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clean vehicle
assistance program

Highlights – First 6 months

- 3000 applicants
- 400 grants
- $1.5 million
- 80% of vehicles electric or plug-in hybrid
- 3000 waiting list

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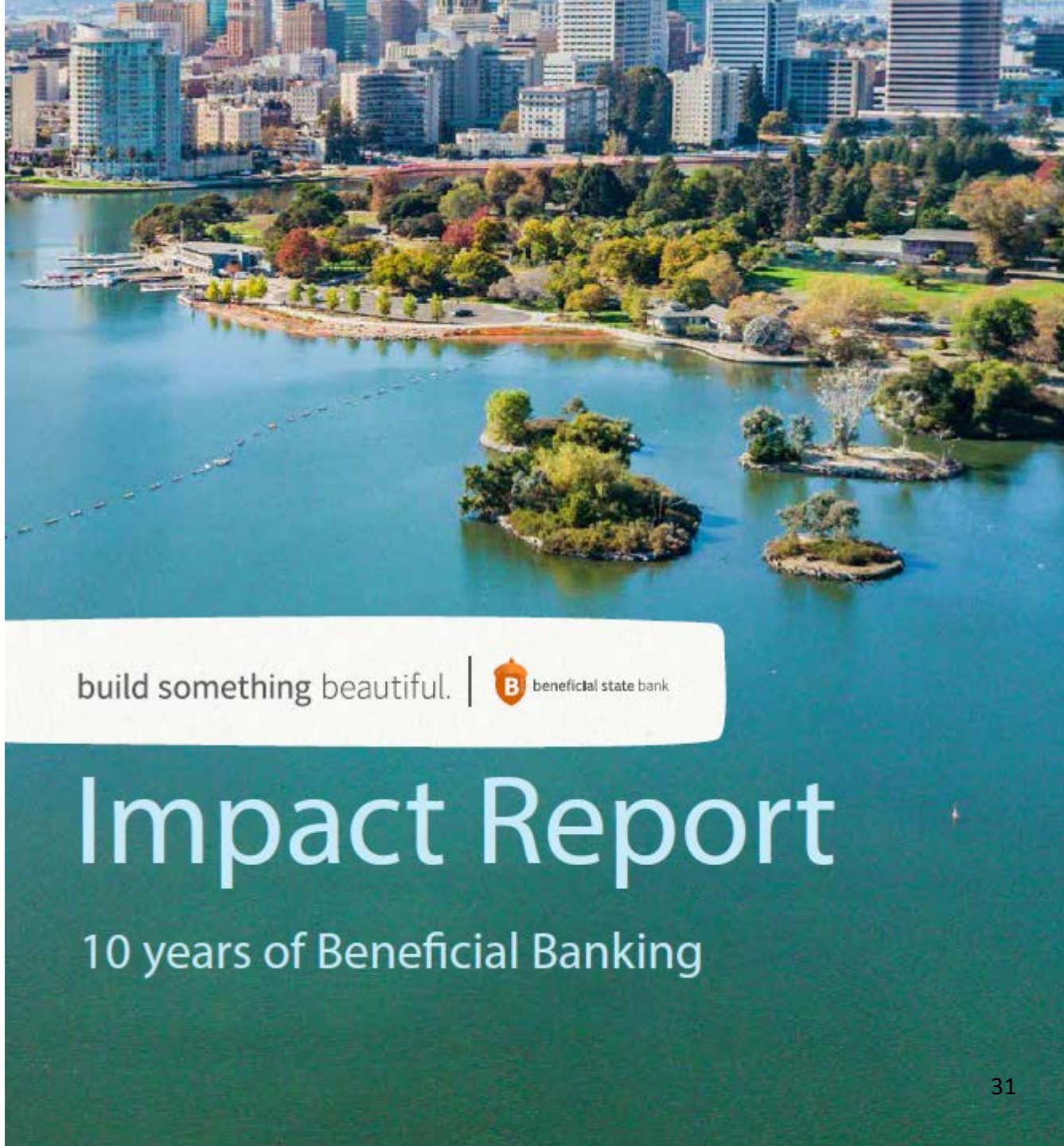
Reporting & Transparency

Plans for Impact Reports & Web

- 2019: Baseline data
- 2020: Goals and results

Purposes

- Celebrate efforts and wins
- Hold ourselves accountable
- Ensure integrity with stakeholders
- Invite participation
- Align with UN Collective Commitment to Climate Action



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Key Takeaways

- PCAF enables the financial industry to take meaningful, collective action against climate change by creating first-ever, open-source accounting methodologies to measure the emissions of loans and investments.
- It is imperative for financial institutions to take action in order to limit global temperature increase in line with the goals of the Paris Agreement.
- PCAF aims to become a global standard. Financial institutions have the opportunity to help shape the methodologies by joining the initiative.
- The global PCAF initiative has members from 56 financial institutions headquartered in 28 countries. Membership is quickly growing.

Interested in joining PCAF?

Expected activities of regional implementation teams	Expected effort of regional implementation teams
Adapt the global carbon accounting standard to the regional context (e.g. **expand methodology with additional asset classes** or issues regarding data availability and quality).	• Each regional **team meets once every quarter** over 2.5 years.
Share experiences & lessons learned among regional teams and with the core team.	• Additional 2 hrs. every quarter to **summarize any lessons learned**.
Make decisions preferably by consensus, or with a qualified majority, on any issue regarding the adaptation of the global accounting standard to the regional context.	• **Provide input and feedback.**

Benefits to members of regional implementation teams

- Ability to **work with other banks** at regional/country level and to improve own carbon accounting.
- **Influence the selection of regional case studies** to be published.
- **Recognition** at climate and sustainable finance events in the corresponding regions.
- **Free technical support** to implement carbon accounting at basic level in own organization

Visit: https://carbonaccountingfinancials.com/join-pcaf

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