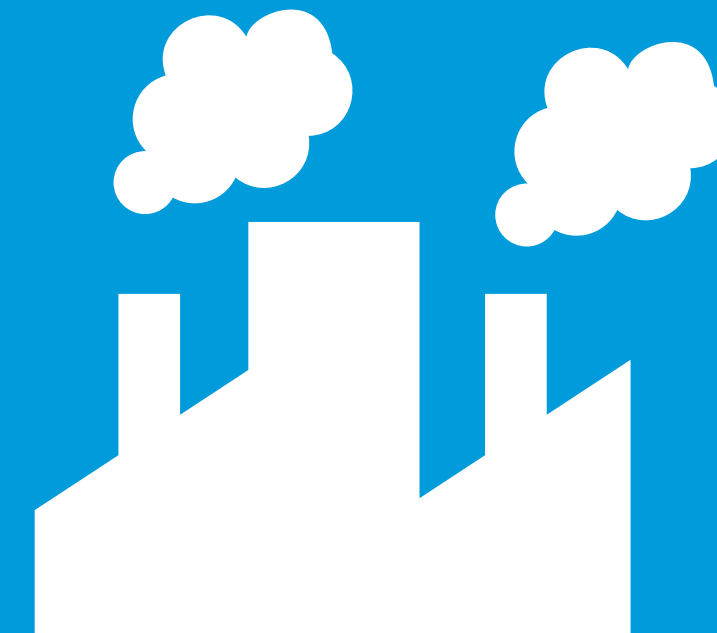
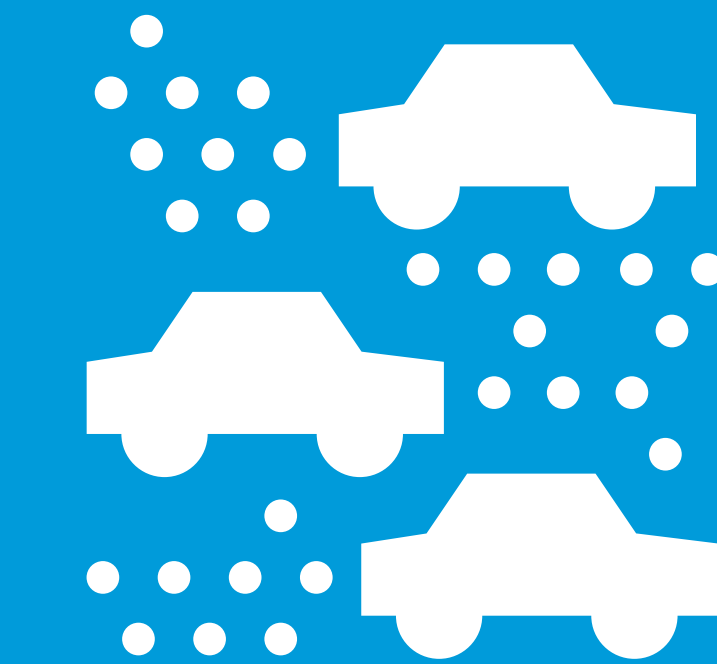
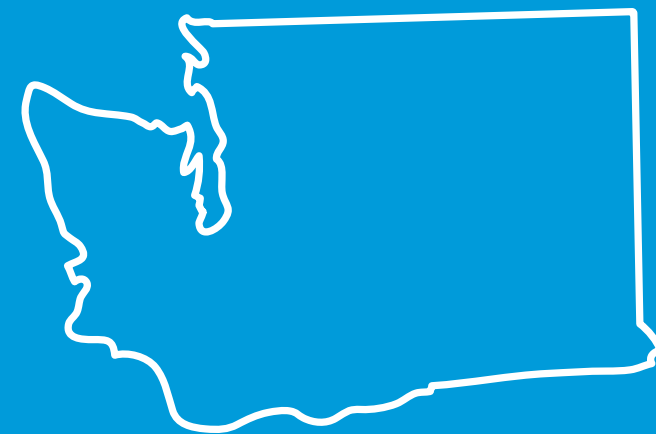


PUTTING THE *REAL* PRICE ON IT

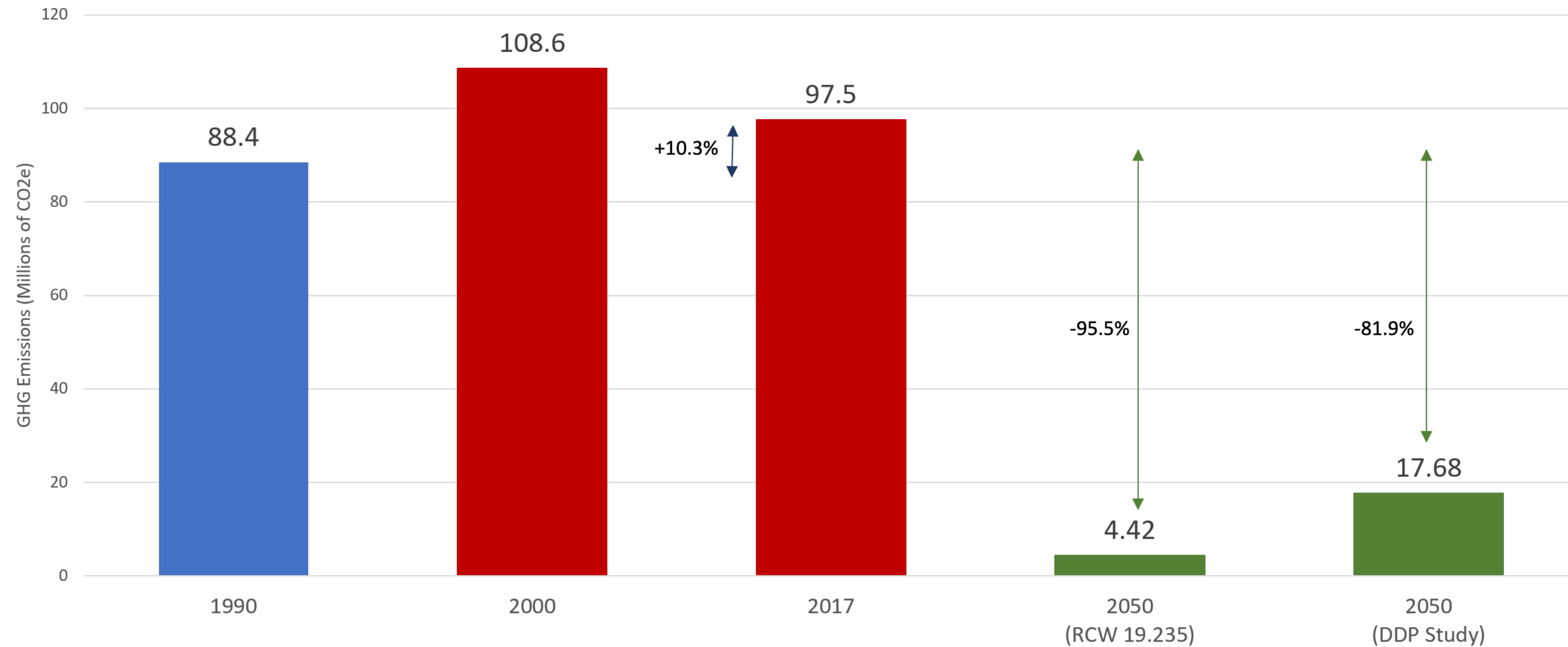
Accounting for the cost of *pollution*



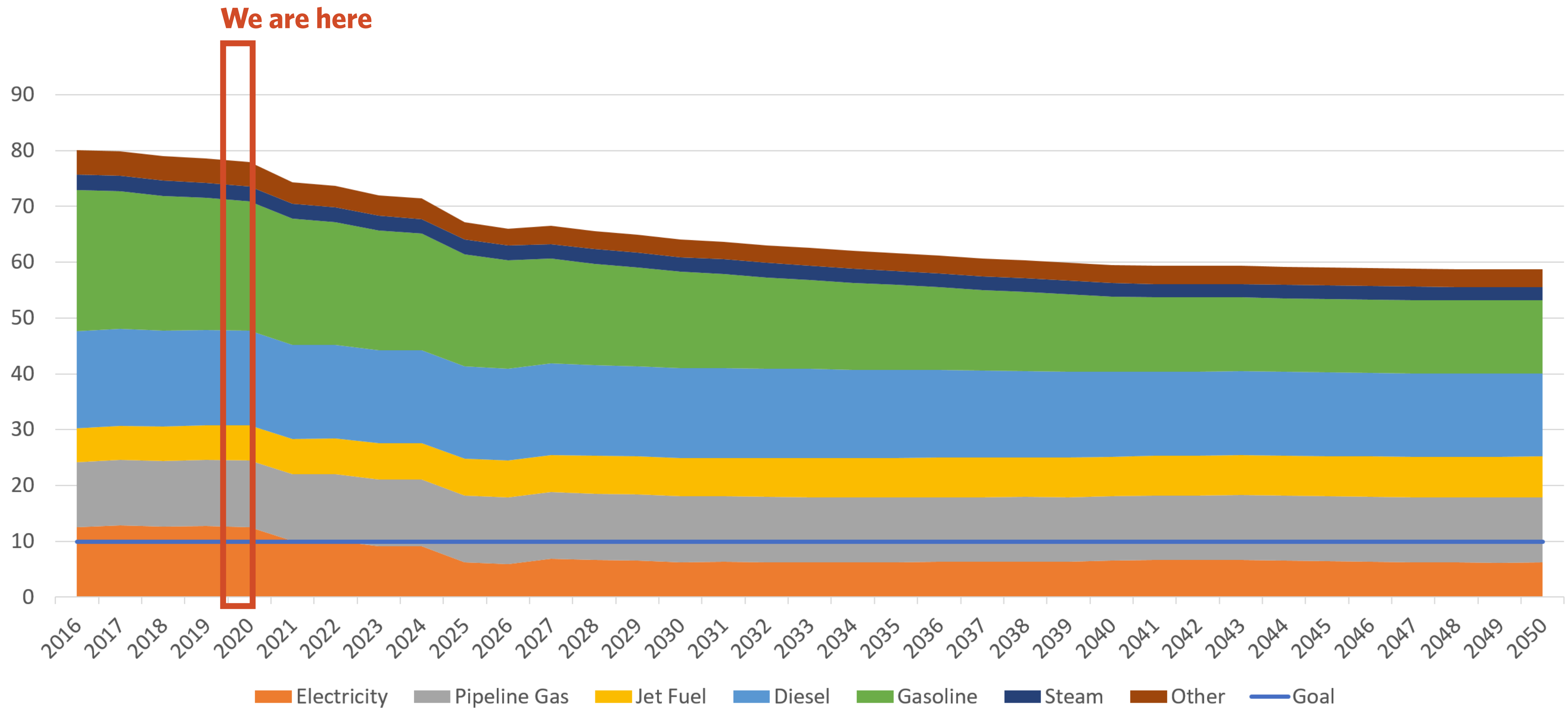
Where is Washington *now*?



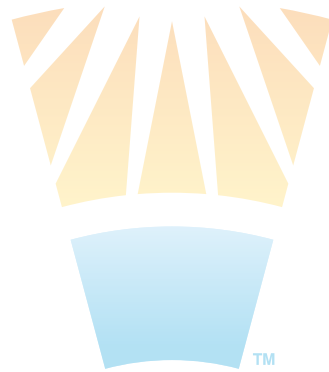
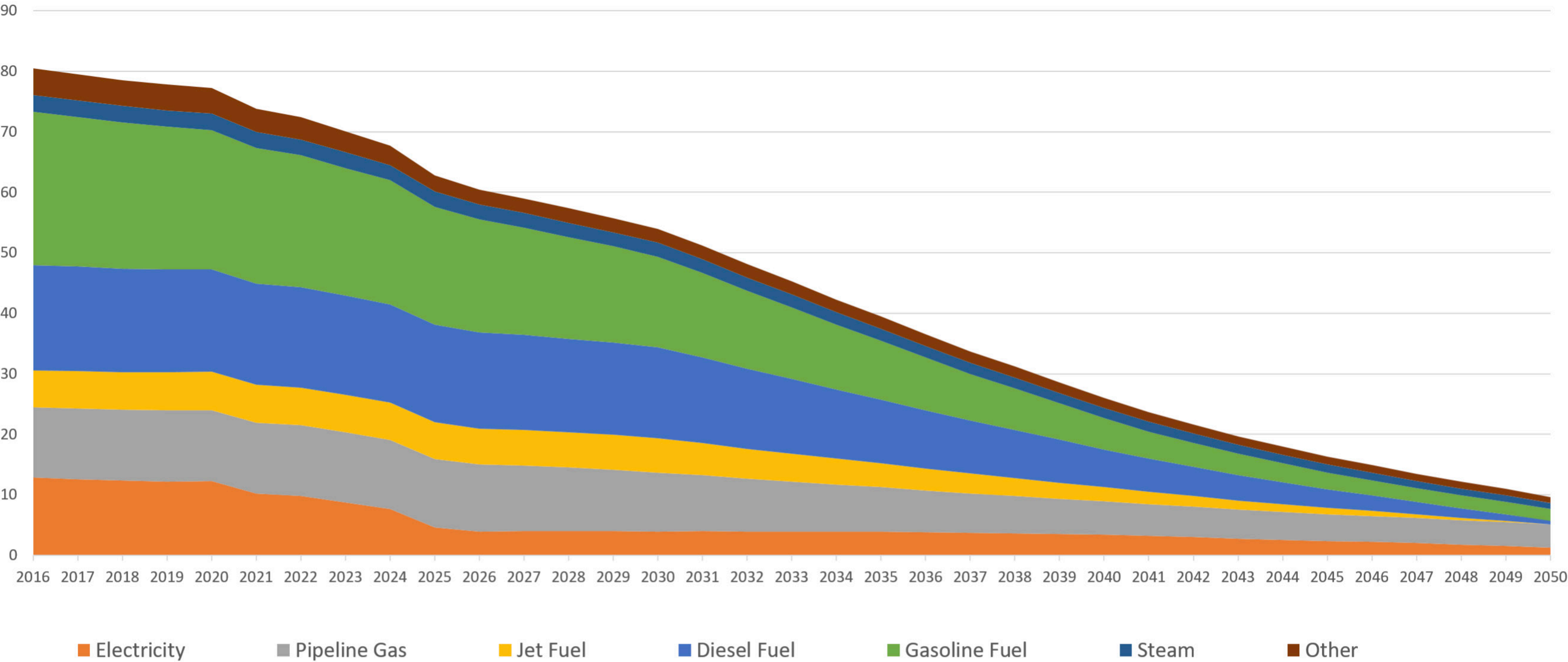
Washington's emissions: Then, Now, and in 2050



We're not on track



The Low Carbon Pathway



The Low Carbon Pathway: *How* do we get there?

Business as usual Reductions necessary



50.49%

89.99%



48.21%

92.56%



14.42%

96.33%



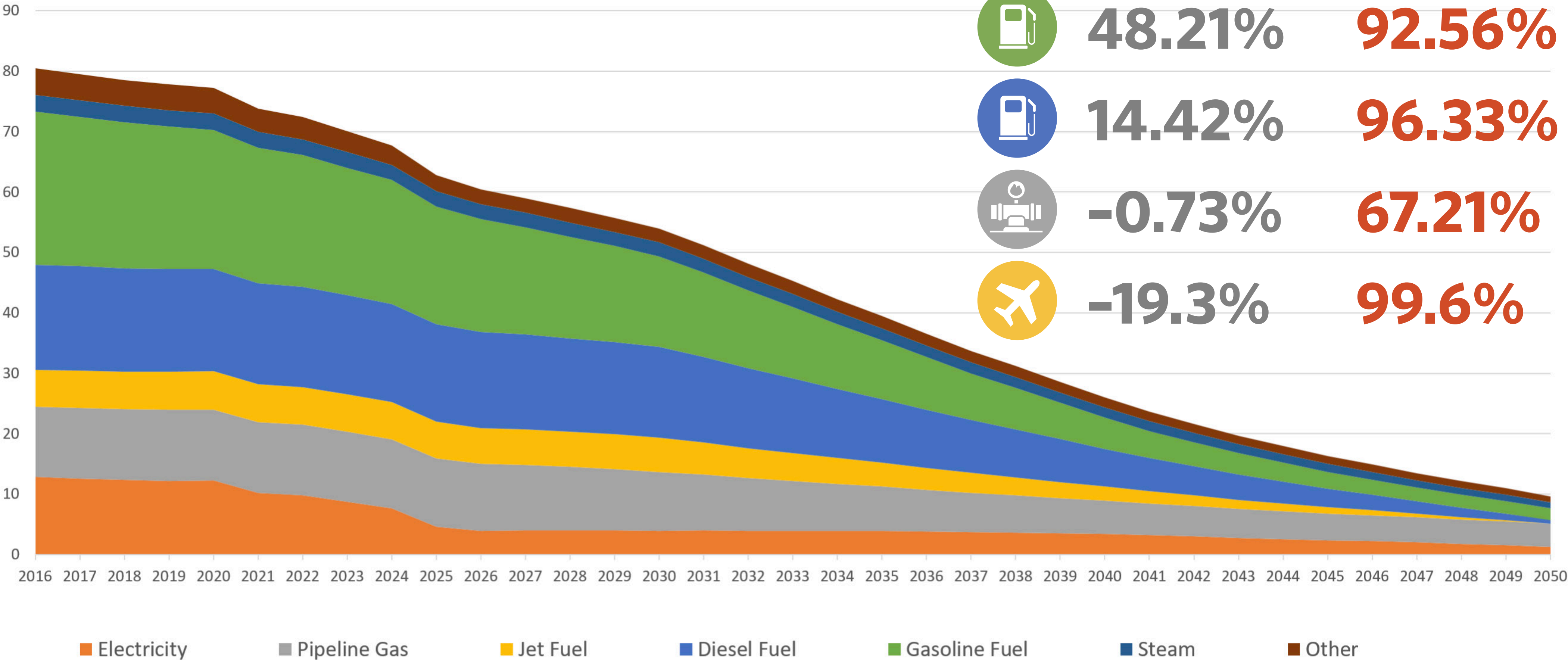
-0.73%

67.21%



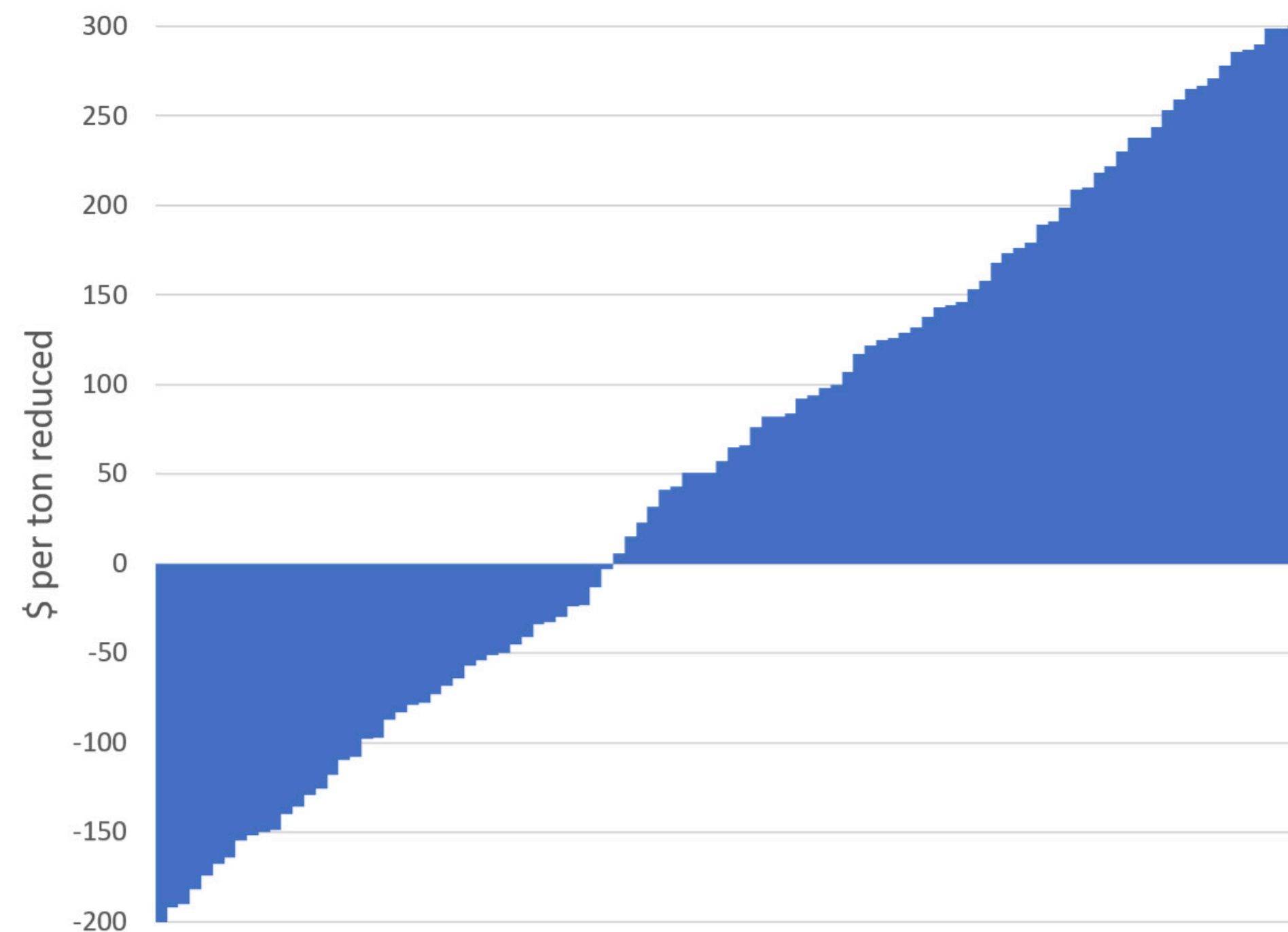
-19.3%

99.6%



How does making pollution more expensive *reduce carbon*?



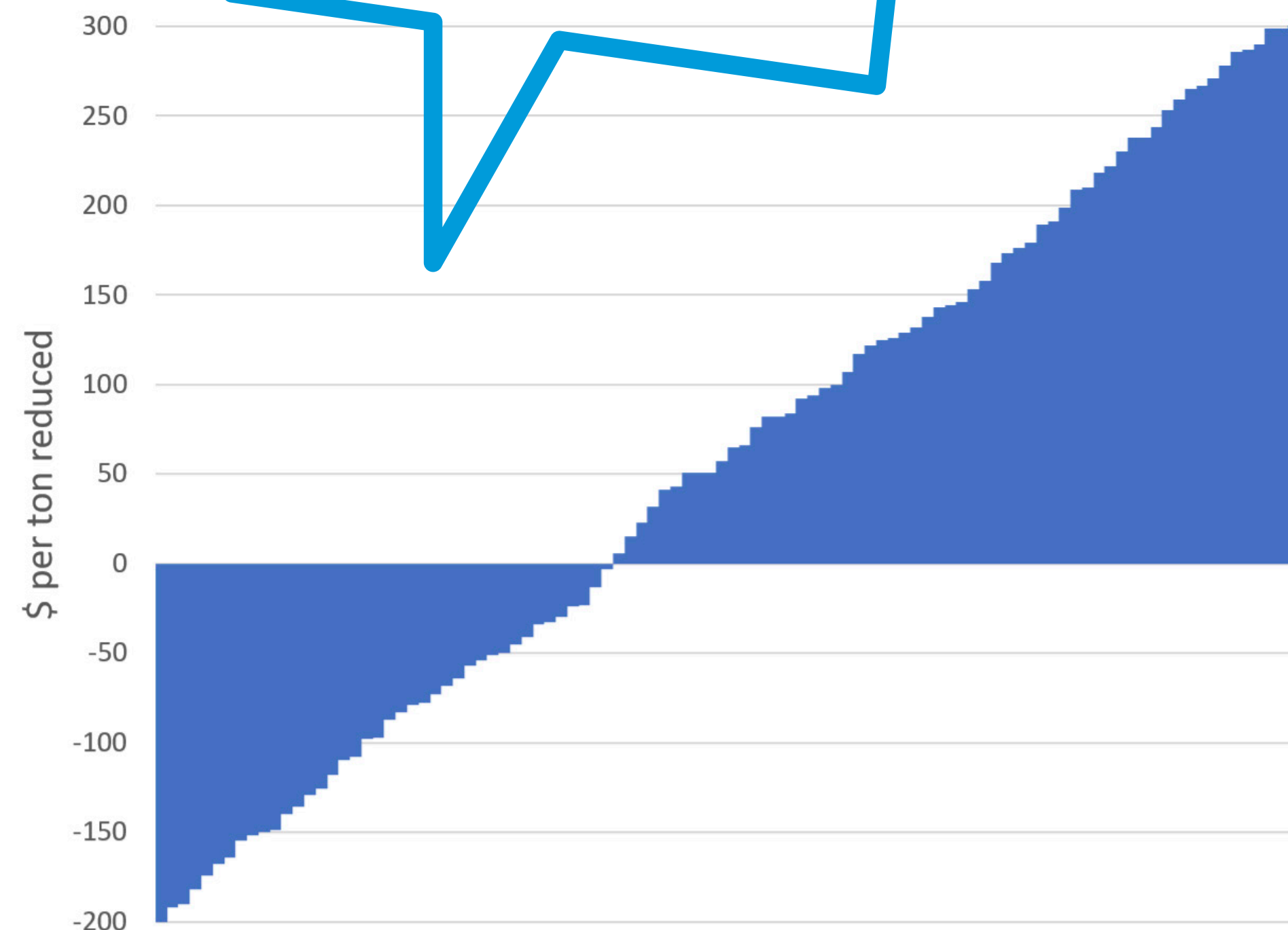


Marginal Abatement Cost

Imagine a company (or an economy) that emits 100 tons/CO₂e/year. It commissions an analysis seeing how much each ton would cost to reduce. The result is a **marginal abatement cost curve that lays out all the costs for each ton**, from cheapest to most expensive.



"Our company wants to minimize costs, so with no policy requirements it eliminates 40 tons of CO₂e."

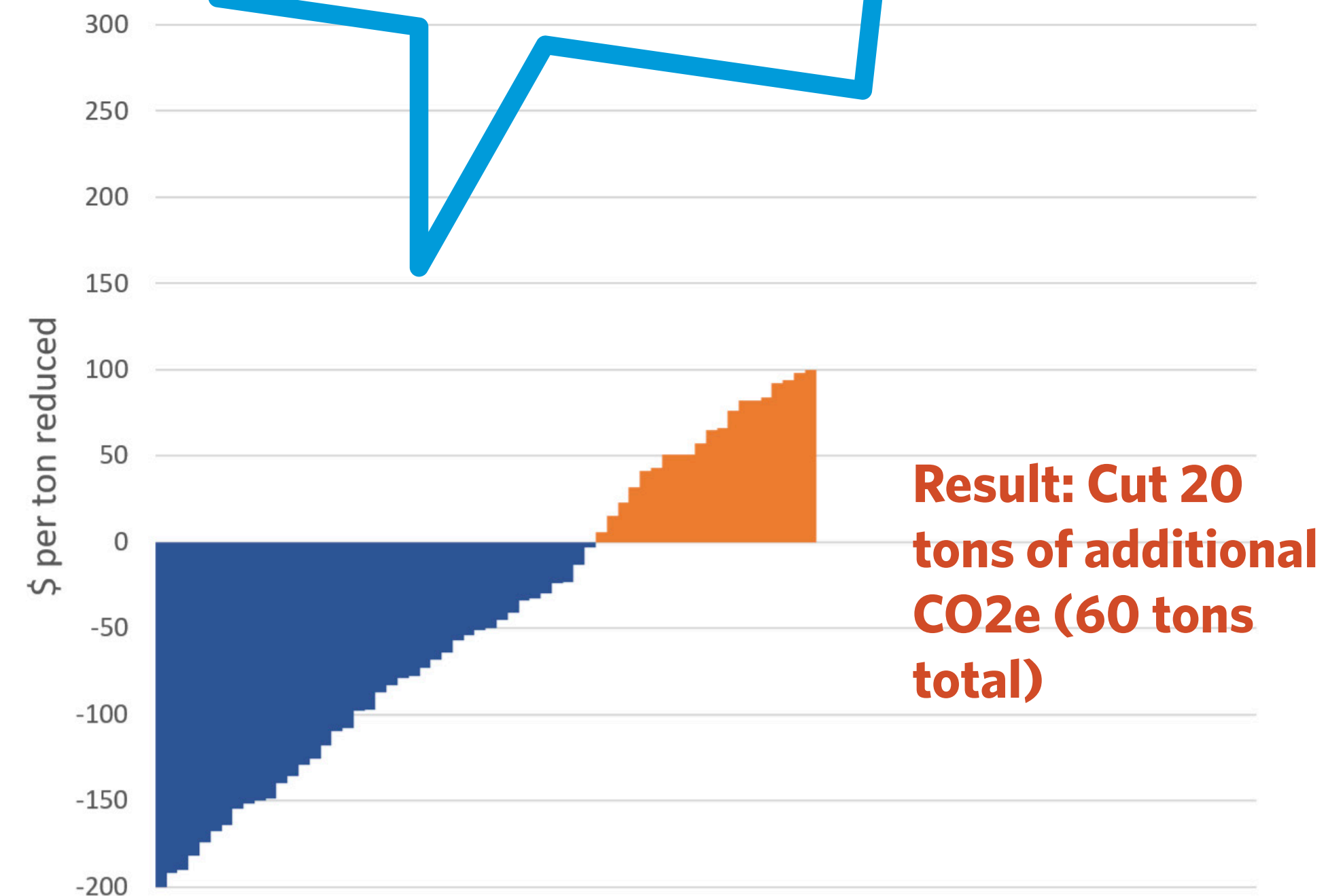


No carbon pricing

Some of the emission reductions are **investments that pay for themselves** as companies discover new measures that cost negative amounts of money—**they save money**. This happens all the time through measures like efficiency and is the reason that companies invest in improved facilities and equipment today.



"Our company likes to minimize its costs, so it reduces those emissions that cost less than the \$100 carbon fee."

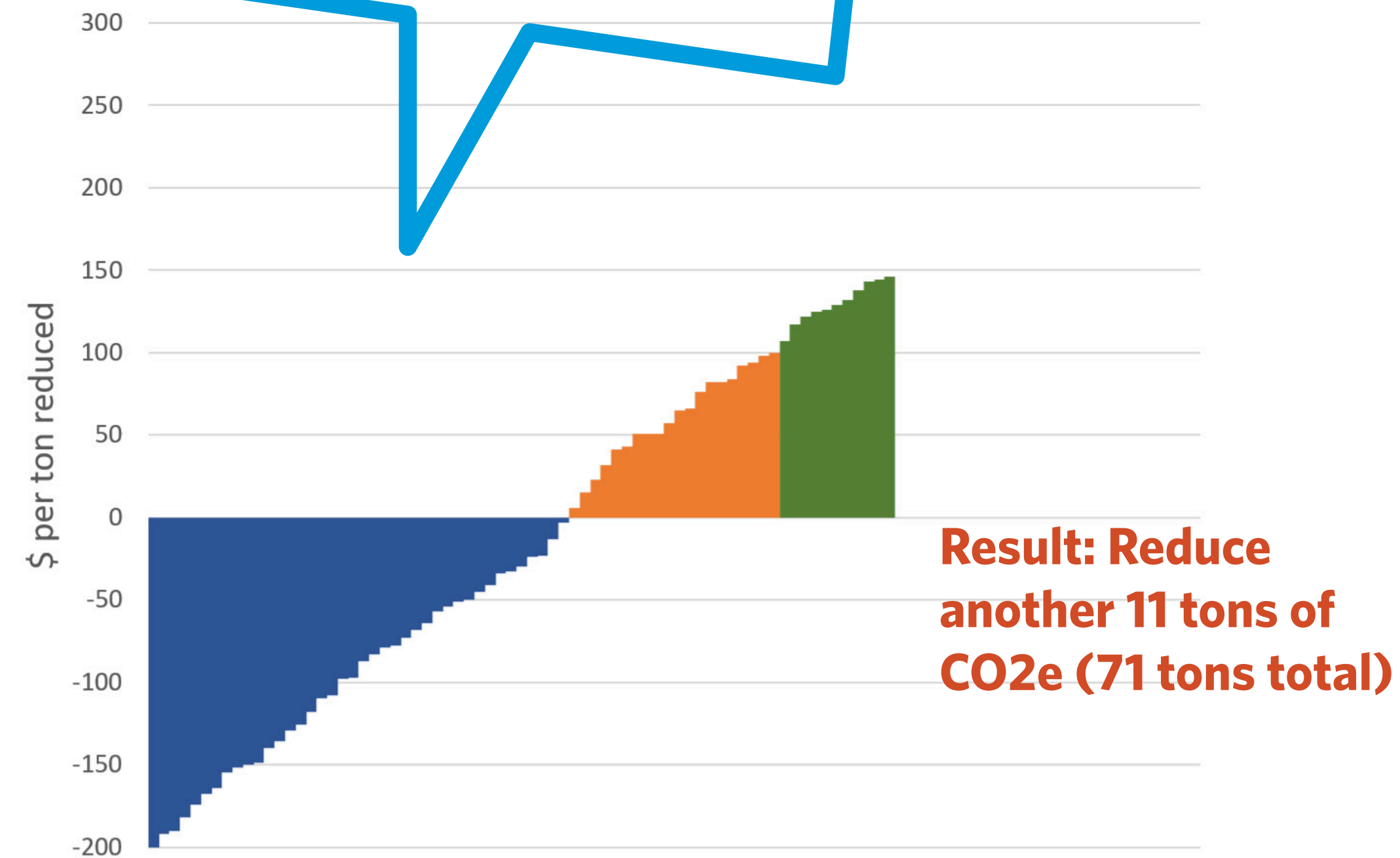


\$100 carbon fee introduced

Now the state imposes a \$100/ton carbon price. A certain number of emissions cost less than that to reduce and so companies make investments where the cost of reduction is less than the cost of paying the price.



"Our company wants to further reduce costs and these state incentives mean we can reduce CO2e *and* save money."

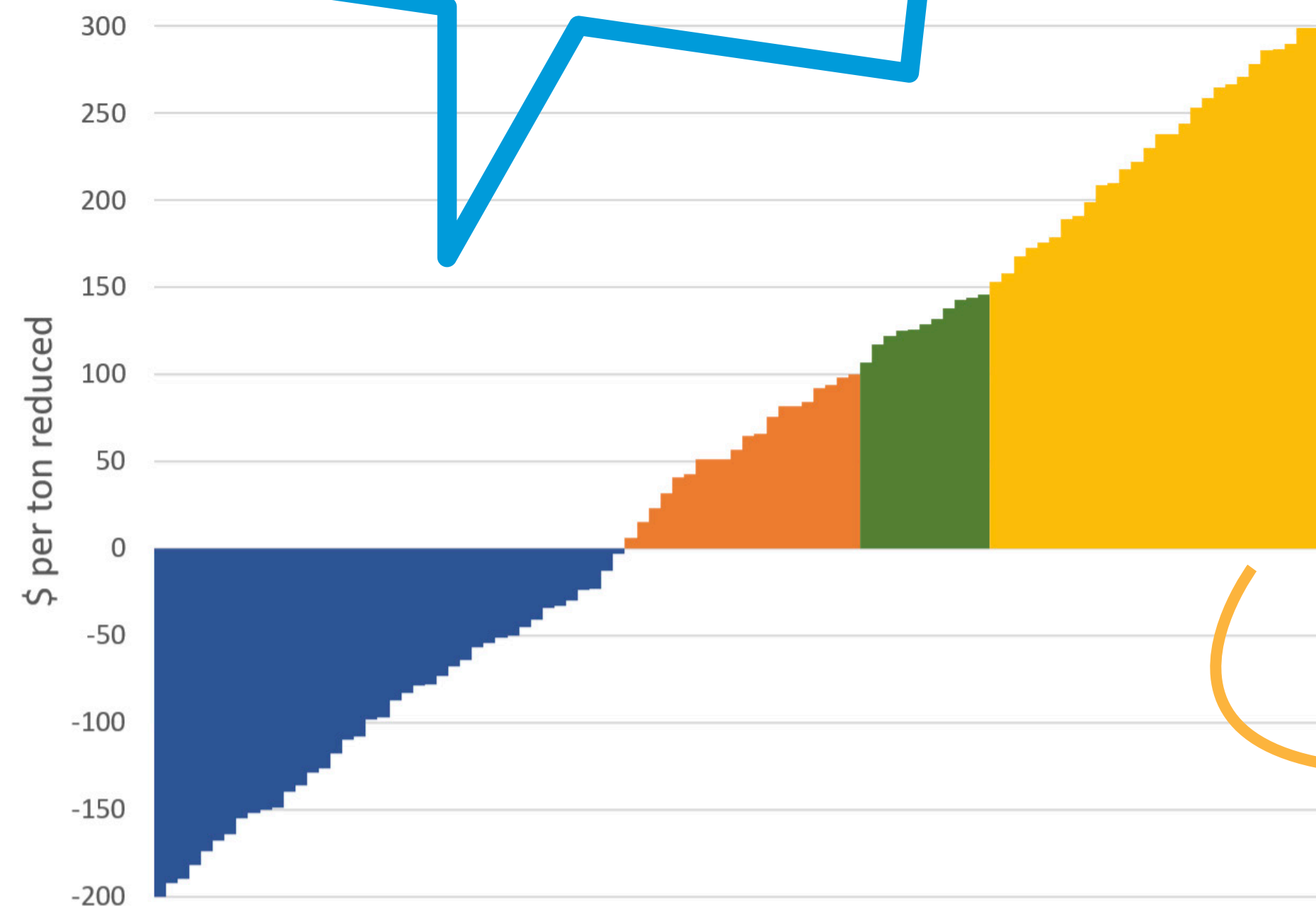


\$100 carbon fee + \$50 state incentives

With all the money it's raising from the carbon price, the state decides to pay companies an additional amount equal to \$50/ton to reduce even further. Companies can make more investments that state funds have now made more affordable.



"Our company went from 100 tons/CO2e/year to 29 tons/CO2e/year."



29 tons left

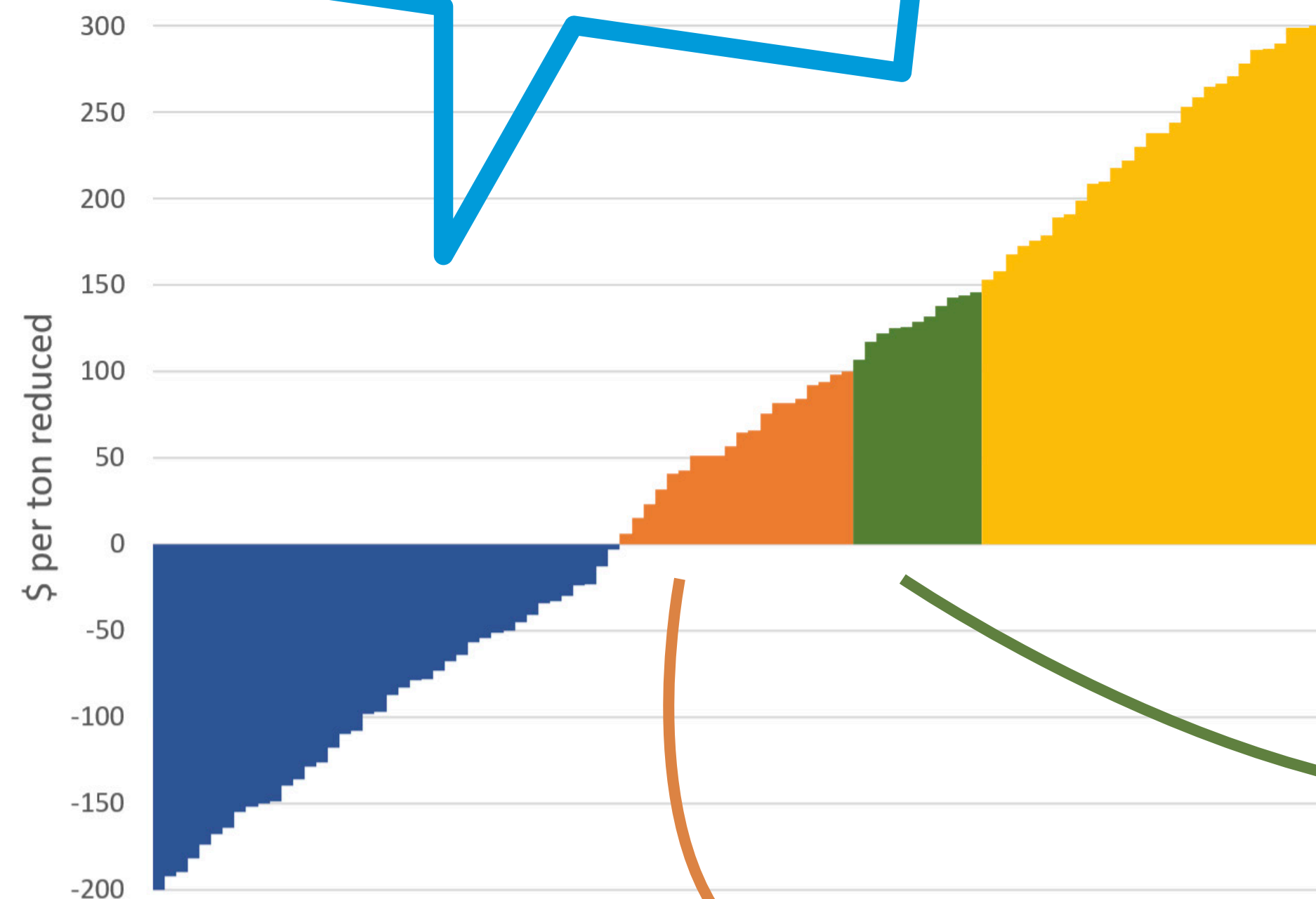
Companies can spend more to reduce even further, but that would cost more than just paying the carbon price (of \$100/ton).

Yellow = Emissions that are left and the company continues to pay to emit them.

At 29 tons at \$100/ton = \$2,900/year



"Our company went from 100 tons/CO2e/year to 29 tons/CO2e/year."



The opportunity for jobs

Carbon pricing, depending on some policy choices, is likely to produce \$1.2-2.4 billion/biennium

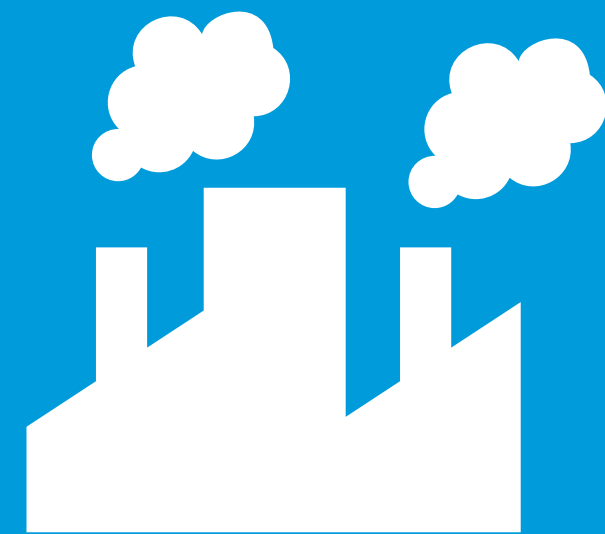
Yellow = Emissions that are left and the company continues to pay to emit them.

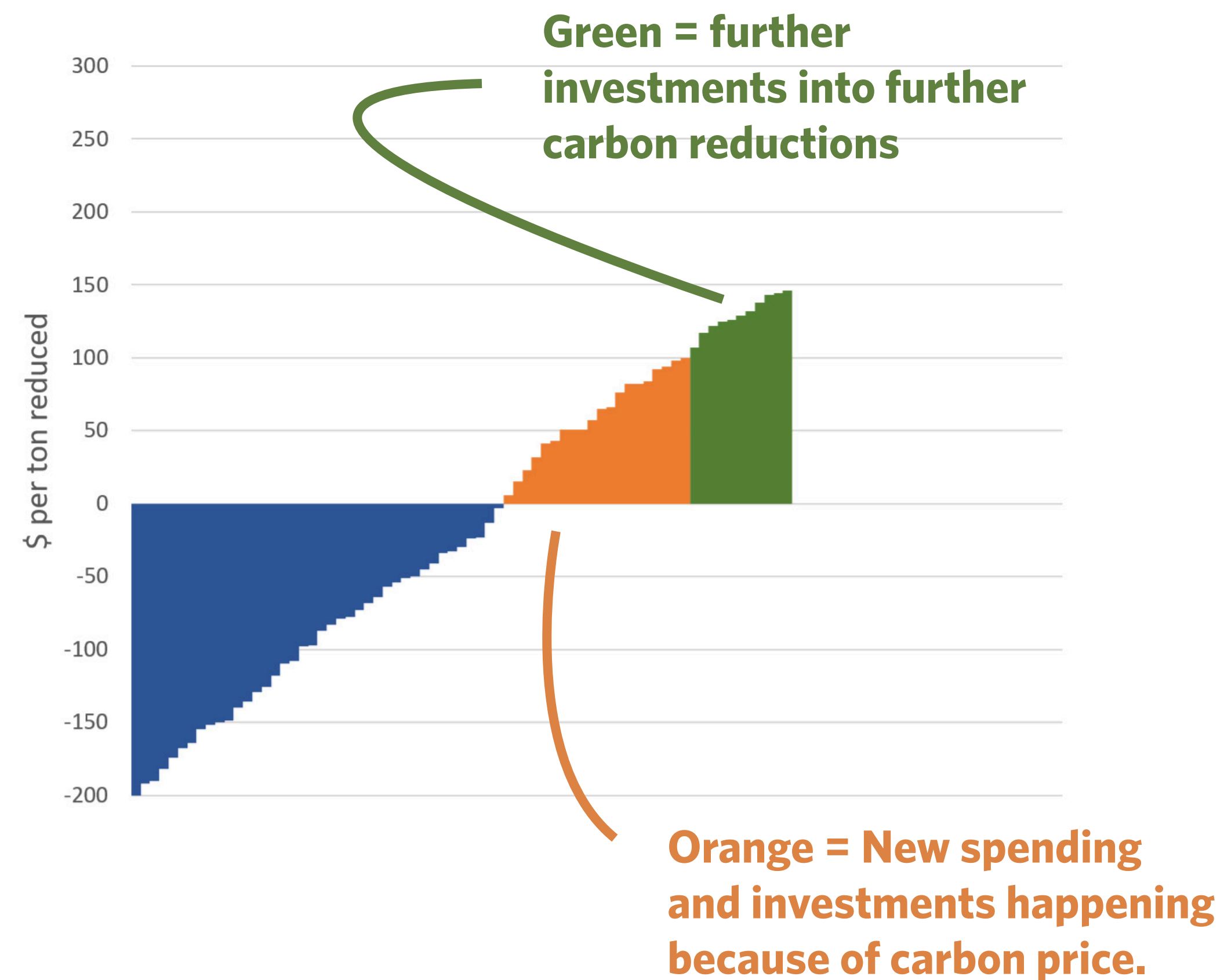
Green = Investments resulting from state directed funds that can be spent on carbon reduction infrastructure—new equipment at facilities, transit projects, clean energy and much more.

Orange = New spending and investments in capital infrastructure that would not have happened without a carbon price.



2 approaches:
carbon tax/fee
and *cap/invest*





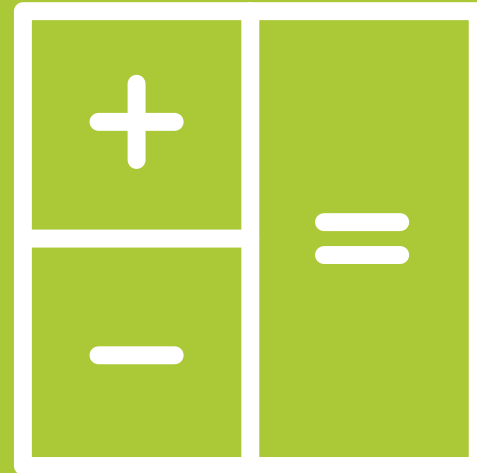
Carbon Tax/Fee basics

By setting and then gradually increasing the price, the **orange section** continues to grow—**more investments become cost-effective**. Money raised can be spent multiple ways (true of all carbon pricing systems): Tax cuts or dividends returned to the people (I-732) or investments into further reductions (**green wedge**).



What are the **benefits** of a carbon tax/fee?

Much less complicated than cap & invest.



More predictable for entities that are required to comply—greenhouse gas emitters.



Simplicity means it's less open to being gamed and eliminates participation of the financial industry and others.

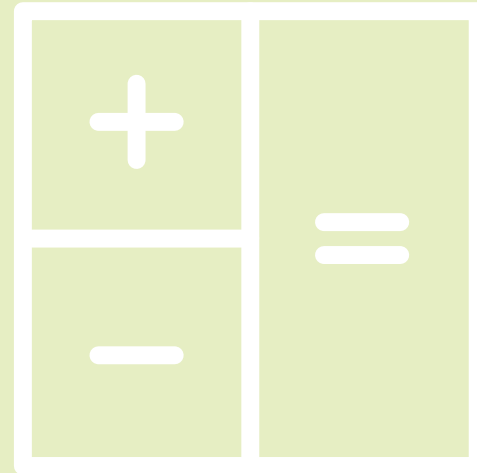


Somewhat more predictable revenue generation than cap & invest.

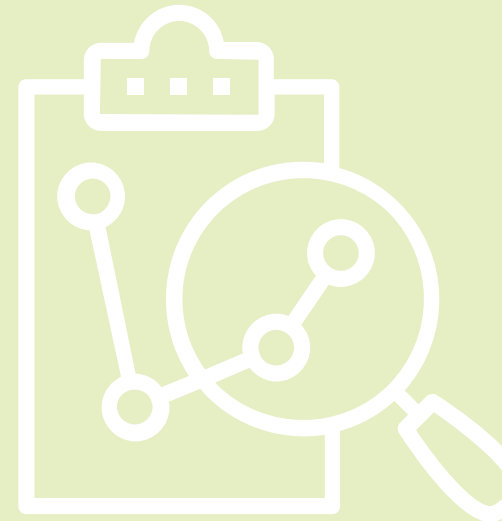


What are the **concerns** of a carbon tax/fee?

Much less complicated than cap & invest.



More predictable for entities that are required to comply—greenhouse gas emitters.



Simplicity means it's less open to being gamed and eliminates participation of the financial industry and others.



Somewhat more predictable revenue generation than cap & invest.



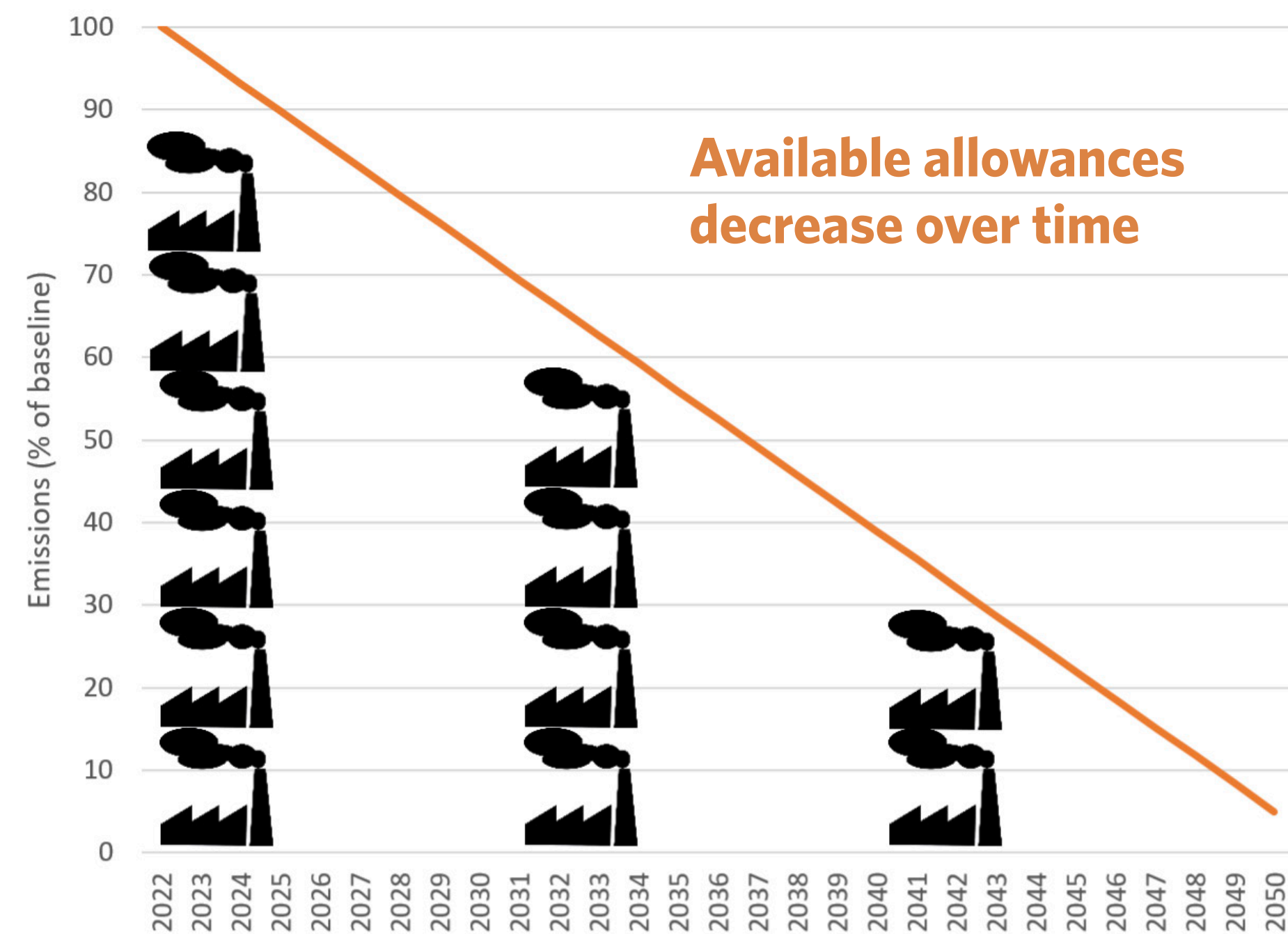
Unlikely to be politically possible to set the carbon price at the level necessary to achieve reductions needed.

When exemptions are provided, they eliminate all reduction obligation—the rest of society must cut more than their fair share

Revenue is vulnerable to changes in amount of pollution. During a recession, revenue will dip.

(The same for all carbon pricing systems.)

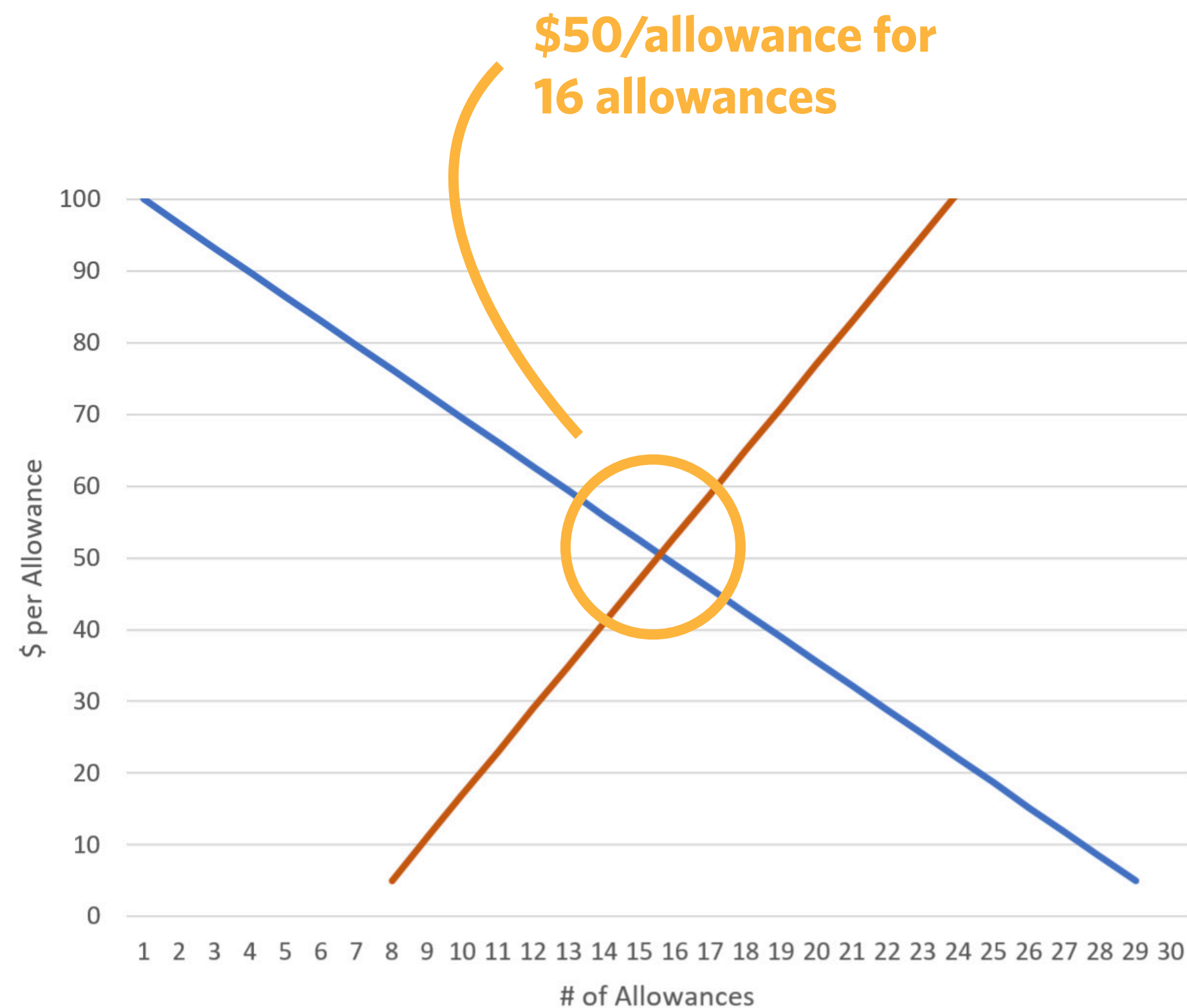




Cap/Invest basics

State law sets a baseline emissions level and reduction requirements to achieve goals. Every year the state issues allowances (1 allowance = 1 ton of emitted CO₂e) equal to the total emissions cap. **Allowances are auctioned off to covered parties and others throughout the year.** Regulated entities must submit allowances equal to their covered emissions at the end of each compliance period—**if an entity doesn't have an allowance, it cannot emit a ton of carbon.**





Cap/Invest Year 1

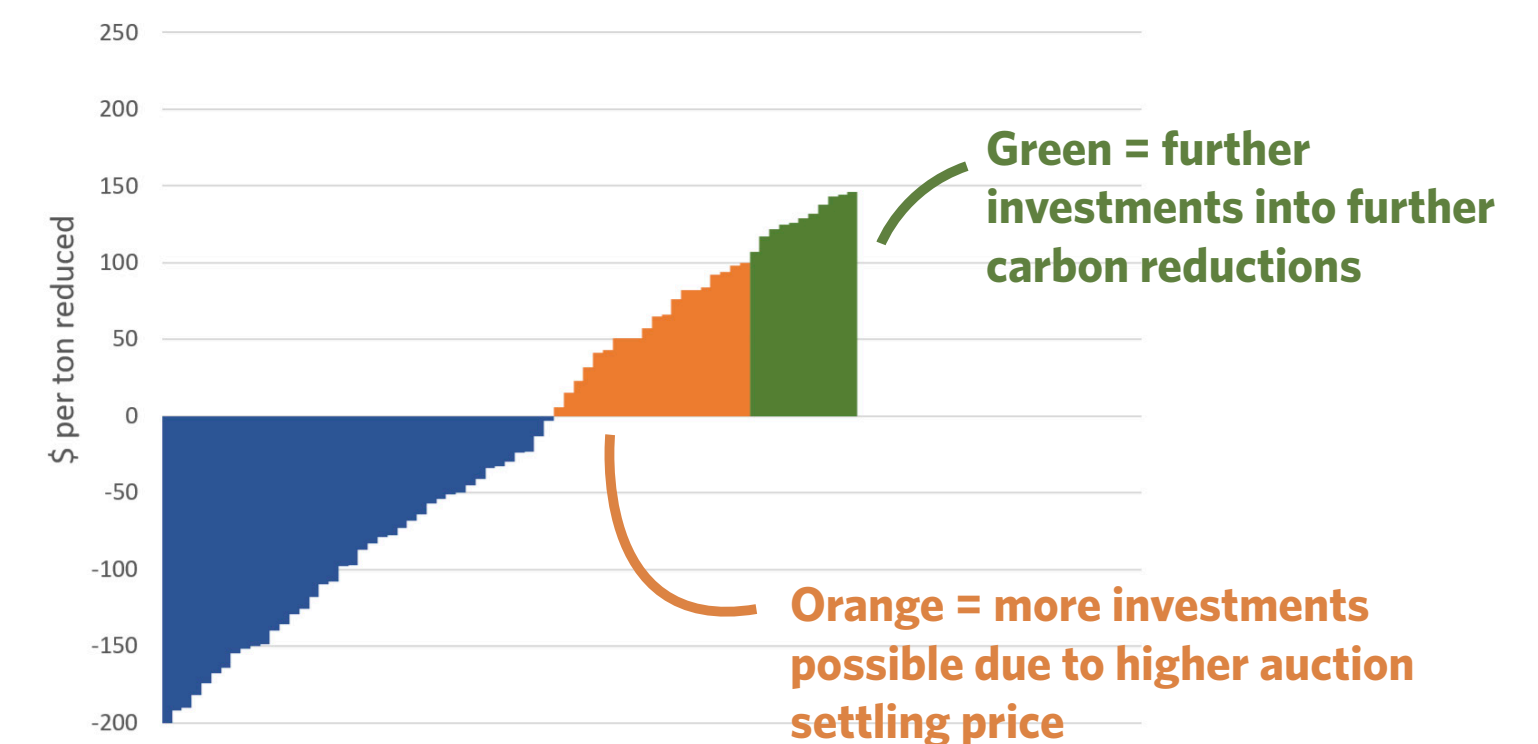
Supply and demand tell us how much allowances will go for in a market. Where the supply curve for allowances meets the demand curve for allowances is where an auction will clear. **As allowance supply falls, auction prices will climb**—supply and demand—and companies must continue to invest to reduce emissions or pay higher prices for allowances.





Cap/Invest Year 2

As allowance supply falls, auction prices will climb—supply and demand—and every year, the state will offer fewer allowances, which means the supply curve shifts to the left. The result is that the intersection of supply and demand results in a higher auction settling price, increasing the likelihood of more investments to reduce. (**orange**)





Cap/Invest Year 3

Fewer and fewer allowances are available and fewer are sold. The state complies with the reducing cap.



What are the **benefits** of cap/invest?

A well-designed system provides emission reduction certainty: the market system will increase the price so that the orange + green wedge are big enough to reduce emissions

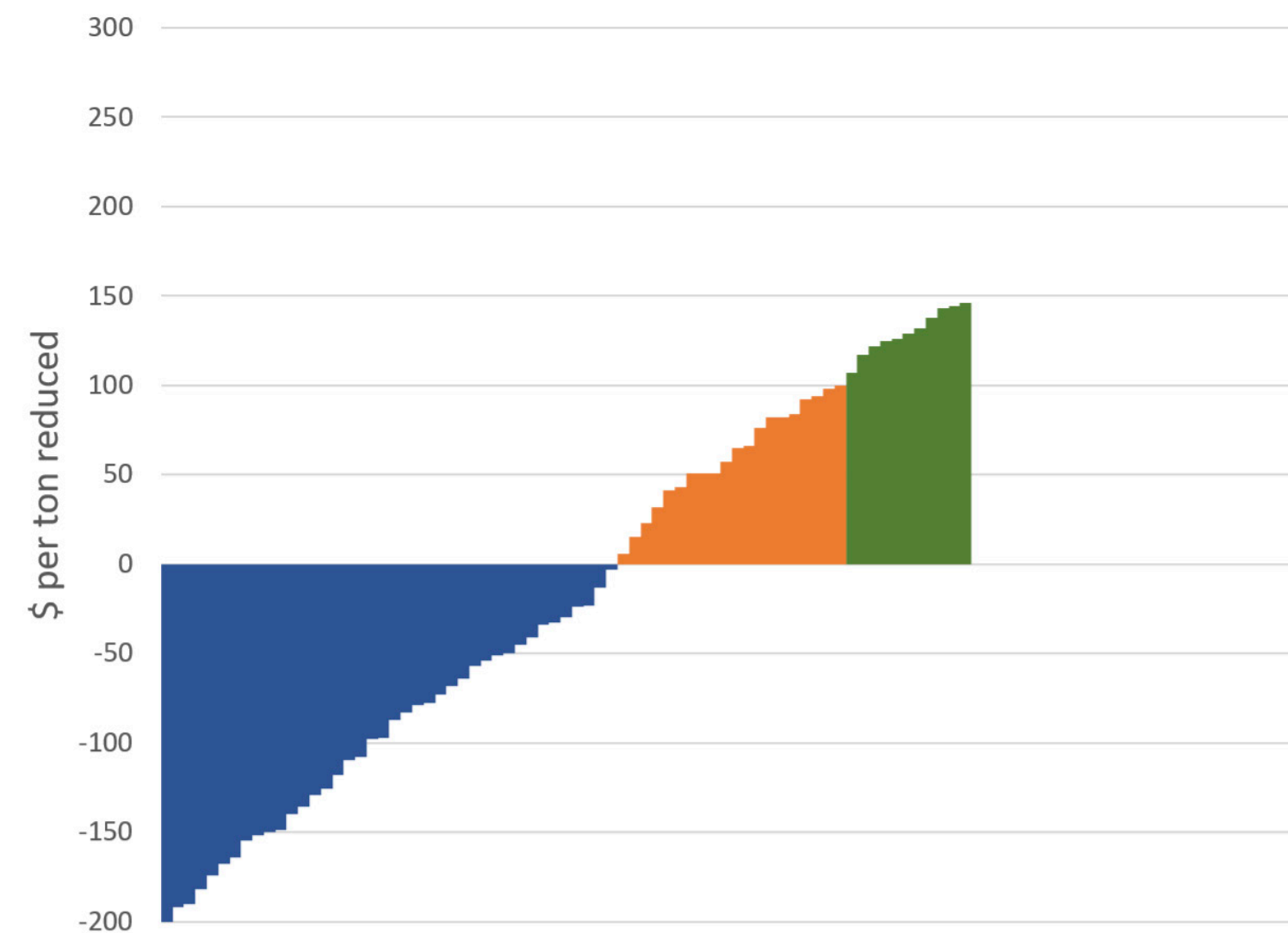
Everyone is in the boat—even companies that are EITE have an obligation to reduce



Improved emission reduction efficiency from linking, which creates larger market: WA + CA + QC, etc



Accelerates clean energy investments and solutions faster than market forces alone



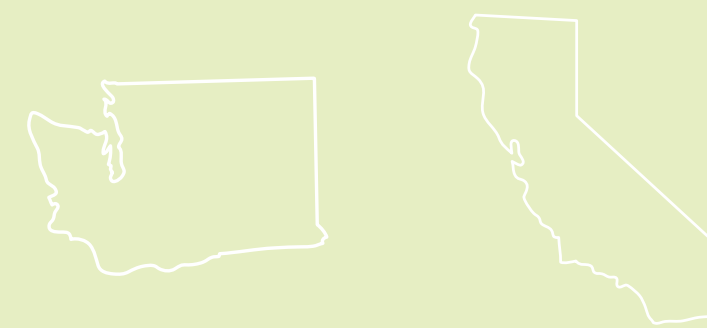
What are the **concerns** of cap/invest?

A well-designed system provides emission reduction certainty: the market system will increase the price so that the orange + green wedge are big enough to reduce emissions

Everyone is in the boat—even companies that are EITE have an obligation to reduce



Improved emission reduction efficiency from linking, which creates larger market: WA + CA + QC, etc



Substantially more complicated.

Third parties like banks can participate.

A poorly designed cap will end up functioning like a carbon tax, eliminating reduction certainty.

Concerns have been raised that because of the market system, it could allow certain polluters—especially those near vulnerable communities—to maintain or increase their pollution just by buying extra allowances.





And/but these concerns are common to both forms of carbon pricing. The risk of unsteady revenue is probably somewhat higher for cap/invest because entities can comply through the secondary market instead of buying from the state auction.

General concerns for carbon pricing

Carbon pricing is regressive: lower income people spend more of their money on energy than the affluent. Requires income supports and ways to mitigate impacts

Unsteady source of revenue: because state revenue is based on how much pollution there is, economic recessions will dip revenue as emissions slow down. Could potentially create reliance on carbon pollution as a revenue source.



How do we *prevent* unintended *consequences*?



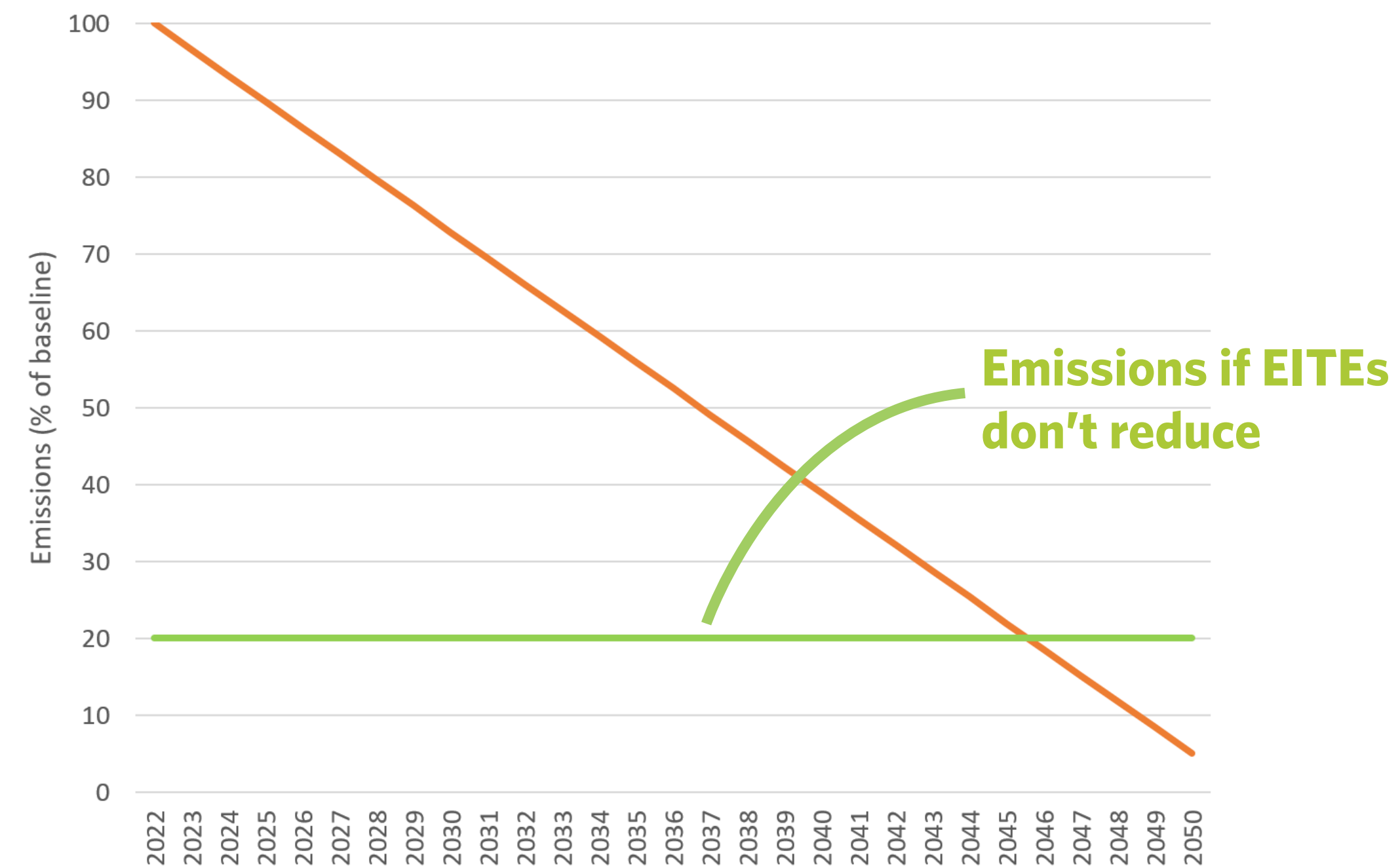


EITEs

(Energy-Intensive, Trade-Exposed)

Certain industries (cement, steel, paper, etc.) are vulnerable to leakage—because they usually operate in global commodity markets, if they raise prices they will not be competitive with other facilities in unregulated markets and production will shift out of state. If this happens, this will increase emissions by more than if the companies had stayed and hurts our economy.



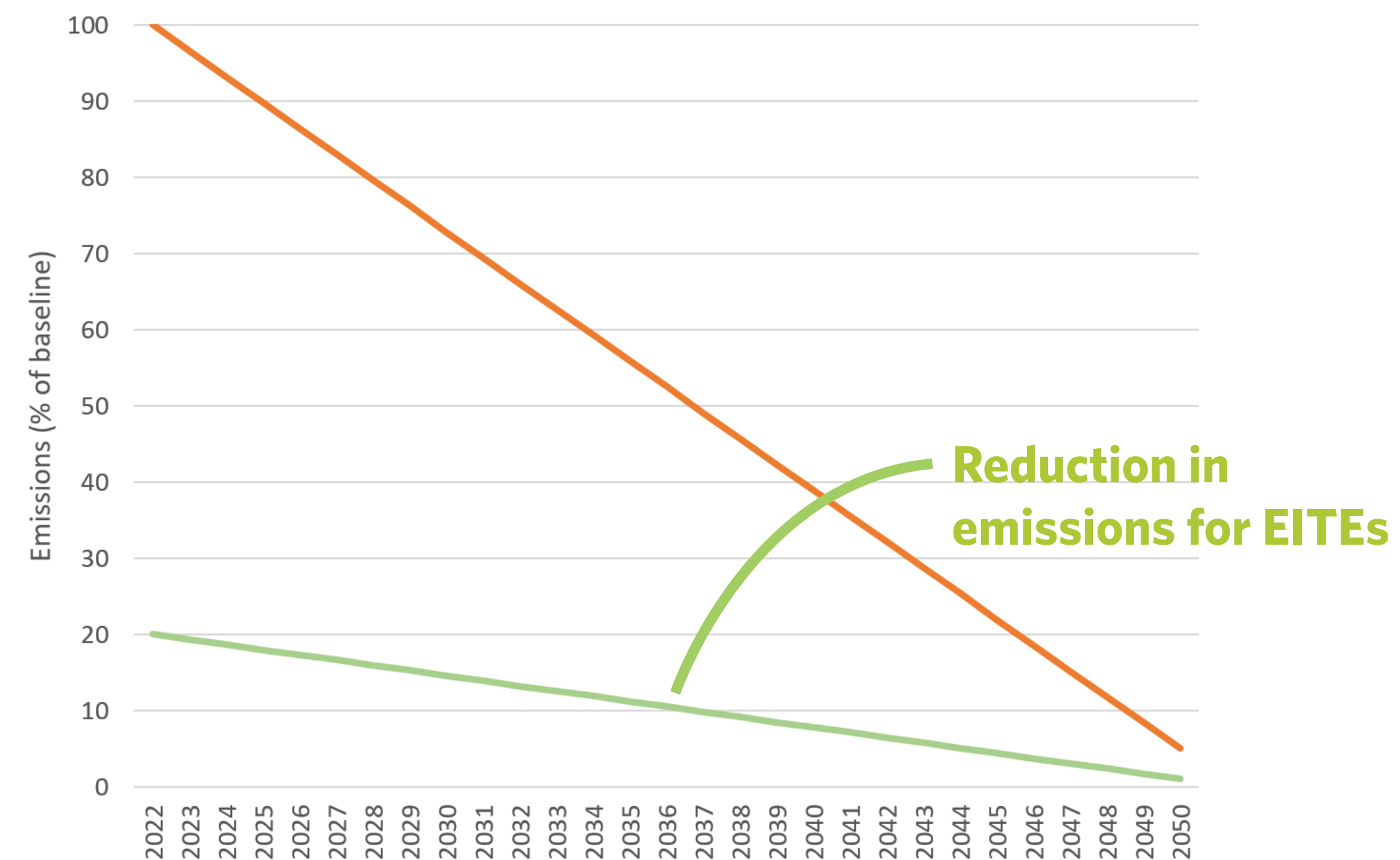


EITEs: Carbon tax/fee

In carbon tax/fee systems, like the one proposed in I-1631 and SB6203 (2018), EITEs receive full exemptions and have no obligations

Risk: if there aren't other emission reduction programs or requirements, EITEs don't have to reduce and may eventually prevent achievement of carbon reduction goals



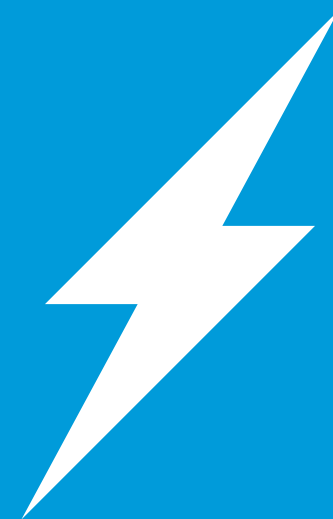


EITEs: Cap/invest

In cap and invest, EITEs receive free allowances and must retire them just like all other entities. For emissions above the free allocation, EITEs have the same options as everyone else: Purchase allowances from auctions, purchase allowances from others reselling their allowances, reduce emissions.



What about the impacts
of *recent success* like *100%*
Clean Electricity?





Cap/Invest alone

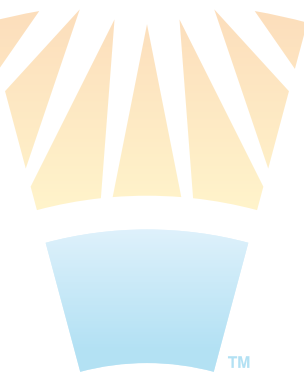
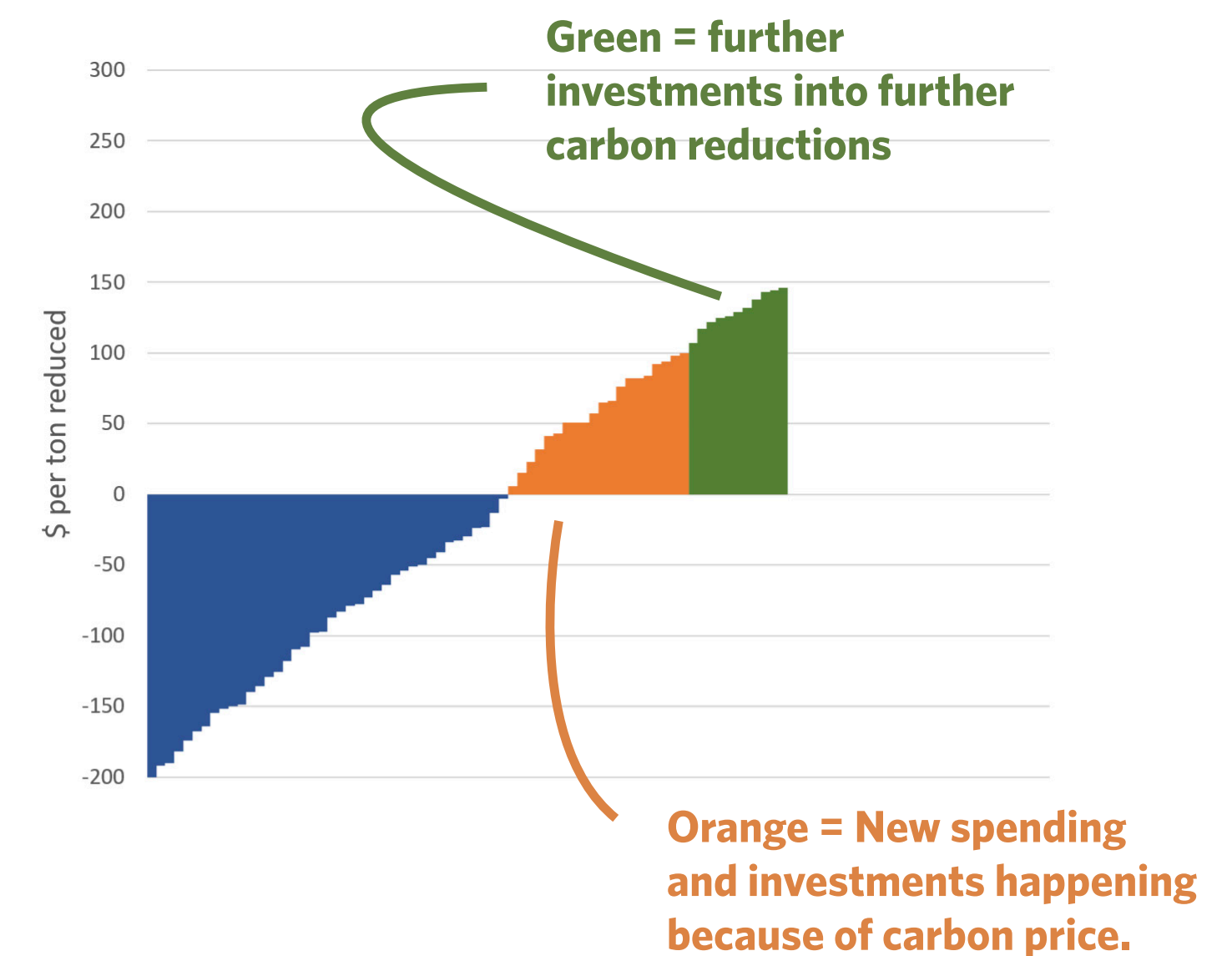
With no additional policies, the price alone sets the demand. Because other policies reduce emissions, they also reduce the demand for allowances. This makes compliance with the cap and trade system cheaper.

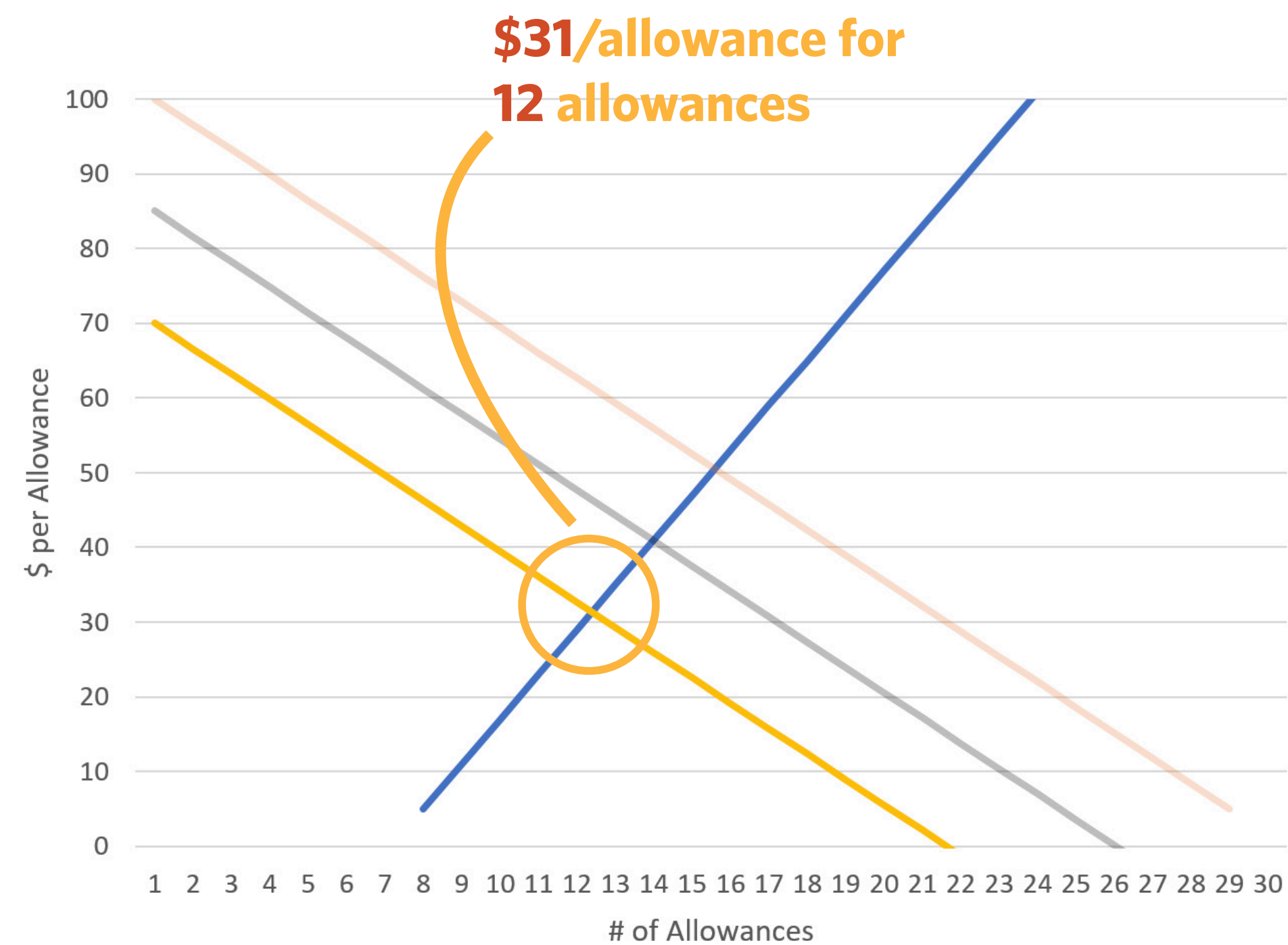




Cap/Invest + investment

When we add policies, the cost of allowances falls. Investments in carbon reduction funded by cap and invest proceeds—RNG, upgrading boilers, EVs, and more.



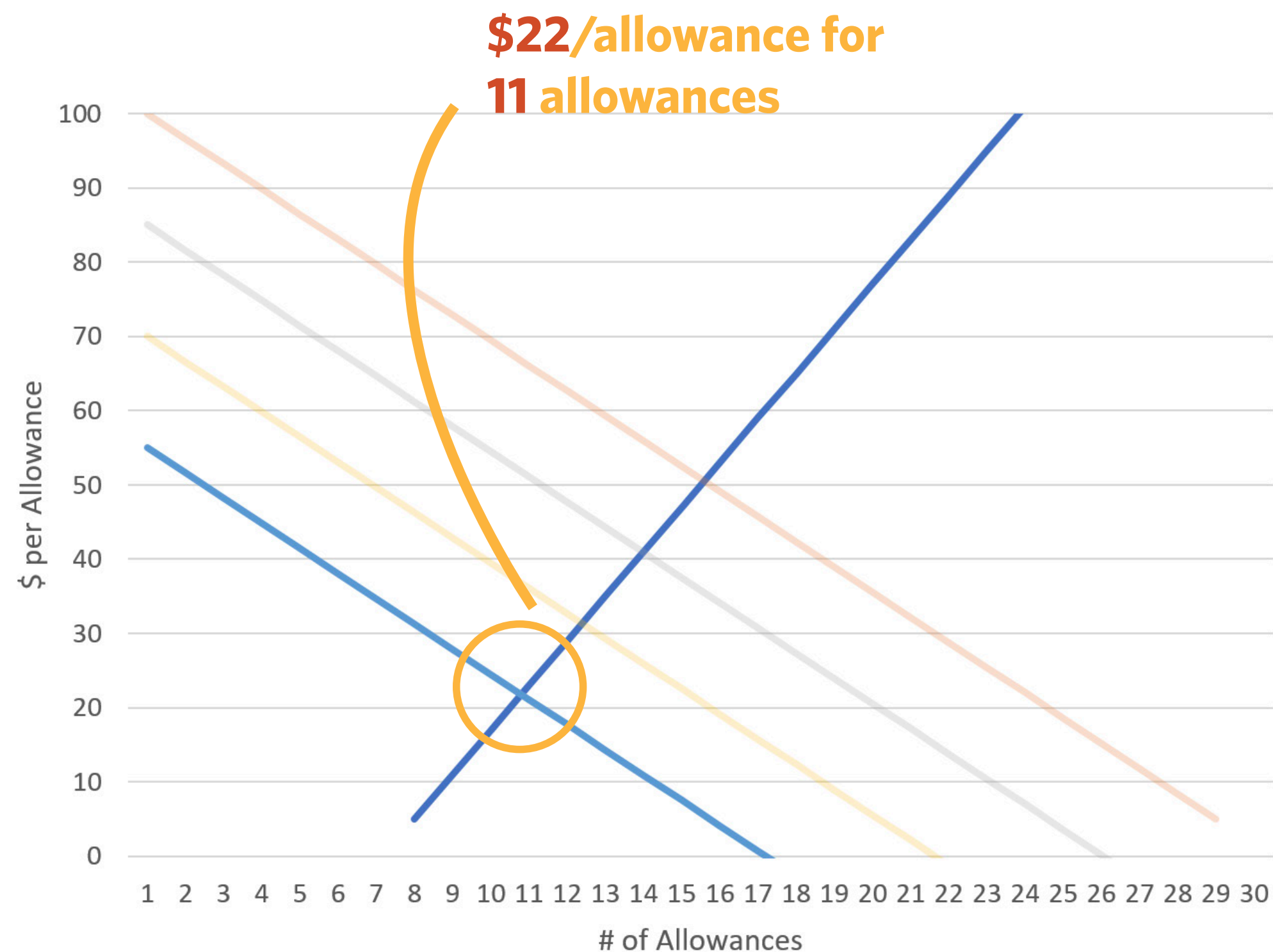


Cap/Invest + investment + other climate policies

When we add policies, the cost of allowances falls. Investments in carbon reduction funded by cap and invest proceeds—RNG, upgrading boilers, EVs, and more—plus 2019's Clean Energy Transition Act (100% Clean Electricity)



These *complimentary policies also guarantee short term reductions* from specific sectors, capturing early non-carbon benefits like *air quality*.



Cap/Invest + investment + policies + clean fuel standard

When we add policies, the cost of allowances falls. Investments in carbon reduction funded by cap and invest proceeds—RNG, upgrading boilers, EVs, and more—plus 2019’s Clean Energy Transition Act (CETA), plus Clean Fuel Standard, etc...



Ok, so what does this all
really mean?

ツ(ツ)ツ

A global look at pricing policy

KEY STATISTICS FOR 2020 ON INITIATIVE(S) IMPLEMENTED OR SCHEDULED FOR IMPLEMENTATION

58 Carbon pricing initiatives selected

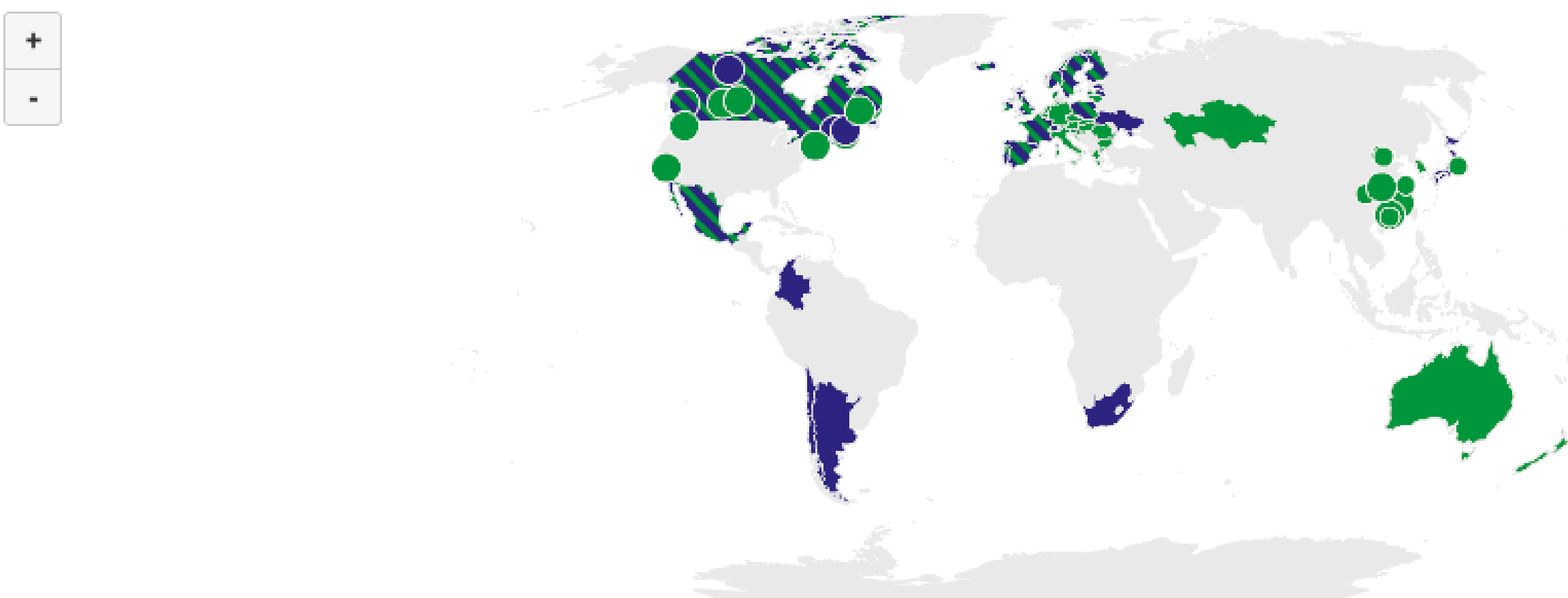
45 National jurisdictions are covered by the initiatives selected

31 Subnational jurisdictions are covered by the initiatives selected

In 2020, these initiatives would cover
9 GtCO₂e, representing **16.0%** of global GHG emissions



Summary map of regional, national and subnational carbon pricing initiatives



● ETS implemented or scheduled for implementation
● ETS and carbon tax implemented or scheduled

● Carbon tax implemented or scheduled for implementation
● ETS implemented or scheduled, ETS or carbon tax under con...

● ETS or carbon tax under consideration
● Carbon tax implemented or scheduled, ETS

Data last updated April, 01 2020

STATUS

- ☒ Implemented
- ☐ Scheduled
- ☐ Under consideration

TYPE OF INSTRUMENT

- ☐ Carbon tax
- ☐ ETS
- ☐ Undecided

TYPE OF JURISDICTION

- ☐ National
- ☐ Regional
- ☐ Subnational

Note: Carbon pricing initiatives are considered "scheduled for implementation" once they have been formally adopted through legislation and have an official, planned start date.

Carbon pricing initiatives are considered "under consideration" if the government has announced its intention to work towards the implementation of a carbon pricing initiative and this has been formally confirmed by official government sources.

Jurisdictions that only mention carbon pricing in their NDCs are not included as different interpretations of the NDC text are possible. The carbon pricing initiatives have been classified in ETSs and carbon taxes according to how they operate technically. ETS does not only refer to cap-and-trade systems, but also baseline-and-credit systems such as in British Columbia and baseline-and-offset systems such as in Australia. Carbon pricing has evolved over the years and initiatives do not necessarily follow the two categories in a strict sense. Due to the dynamic approach to continuously improve data quality, changes to the map do not only reflect new developments, but also corrections following new information from official government sources.

Carbon Pricing Dashboard, World Bank

https://carbonpricingdashboard.worldbank.org/map_data

