IMPLAN

Carbon Emission Reporting

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IMPLAN Presenters

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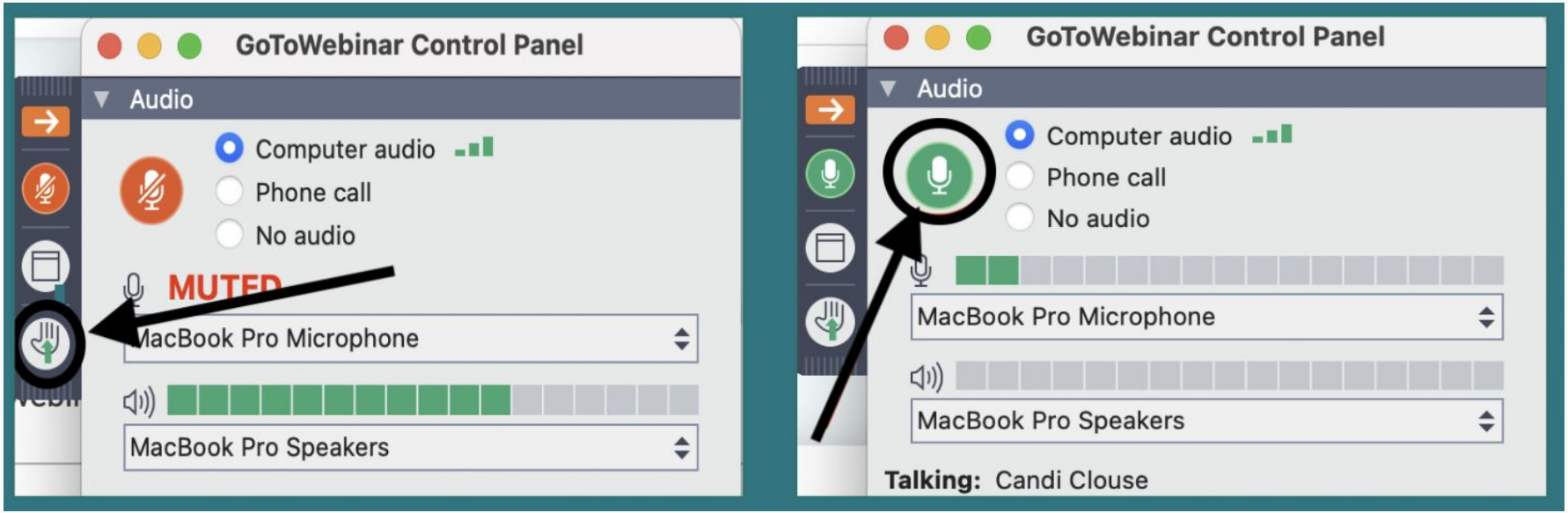
Have a question?



Agenda

- Introduction
- Technical Methodology
- Use Case Demonstration

Introduction

Environmental Data in IMPLAN

Regional Environmental Data and Impact Results are available for the following categories:

- Criteria and Hazardous Air Emissions
- Commercial Non-Hazardous Waste Excluding Construction
- Commercial Non-Hazardous Waste From Construction Activities
- Commercial RCRA-Defined Hazardous Waste
- **Greenhouse Gases**
- Point Source Industrial Releases to Ground
- Land Use
- Mineral Extraction
- Nitrogen and Phosphorus Releases from Agriculture
- Pesticide Releases
- Water Withdrawals
- Point Source Releases to Water

Global Warming Potential in IMPLAN

For US Projects, the base data for Greenhouse Gases are in kilograms of the GHG (such as methane or carbon dioxide).

Then, we use global warming potential data from ReCiPe to convert the various GHGs into carbon dioxide equivalents.

Today we'd like to introduce our latest improvement -

Scope 1, 2, 3 Reporting!

Scope Based Emissions Reporting

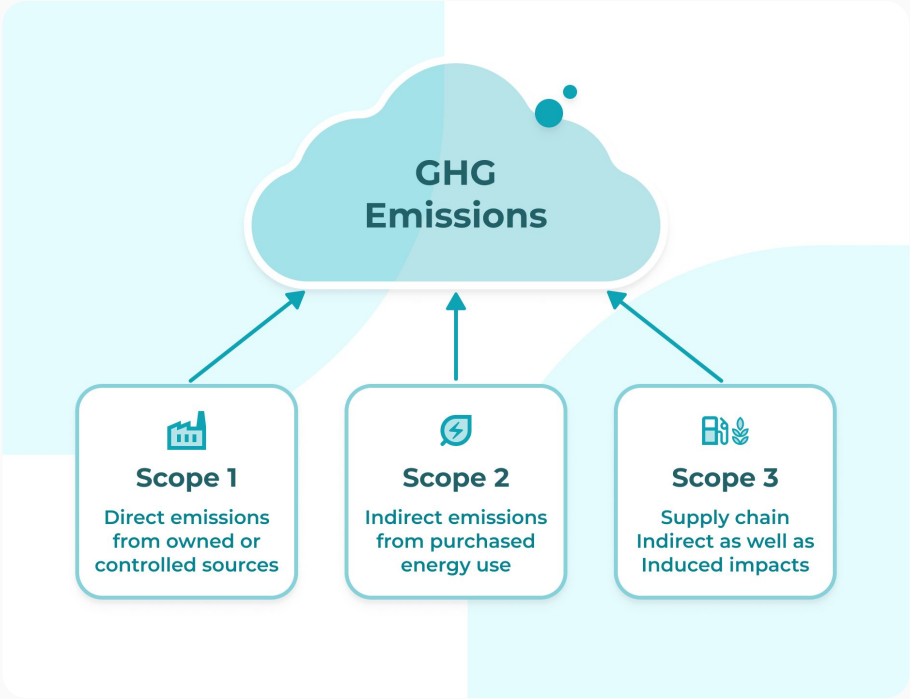
Government imposed mandates are growing more common around the world, requiring large businesses and corporations to report their scope 1, 2, and 3 emissions.

Upcoming US-Based Mandate

Mandate	Region	Scope Requirement	Affected Companies	Status
California's Climate Corporate Data Accountability Act (SB 253)	California	Scope 1 & 2 (2026); Scope 3 (2027) Requires third-party verification w/ limited assurance. Reasonable assurance by 2030.	corporations with over $1 billion in annual revenues	Signed into law

Mandate	Region	Scope Requirement	Affected Companies	Status
California's Climate Corporate Data Accountability Act (SB 253)	California	Scope 1 & 2 (2026); Scope 3 (2027)	corporations with over $1 billion in annual revenues	Signed into law
Greenhouse Gas Reporting Program by Environment and Climate Change Canada	Canada	Scope 1 & 2 Scope 3 is optional, but has been a proposed requirement.	all facilities that emit the equivalent of 10 000 tonnes (10 kilotonnes) or more of GHGs (in carbon dioxide equivalent units) per year	Active
Streamlined Energy and Carbon Reporting (SECR)	UK	Scope 1 and 2 emissions must be reported, with Scope 3 only if deemed financially material	public and private companies with over $636 million in turnover and at least 500 employees. Smaller public and private companies that meet at least two of the following three criteria; turnover of $45.8 million, gross assets of at least $22.9 million, and/or at least 250 employees.	Implementation is expected to begin in 2026.
Corporate Sustainability Reporting Directive (CSRD)	EU	Scope 1, 2, 3	large companies	New rules apply in the 2024 financial year, mandated to begin reporting in 2028 at the latest.
PRC Sustainability Reporting Guidelines	China	Scope 1 and 2, with Scope 3 encouraged but not required	must be reported by companies listed on the Shanghai Stock Exchange 180 (SSE) or the Star 50 Index, or listed simultaneously in Chinese Mainland and overseas markets	Reporting begins in 2025.

What Are Scope 1, 2, and 3 Emissions

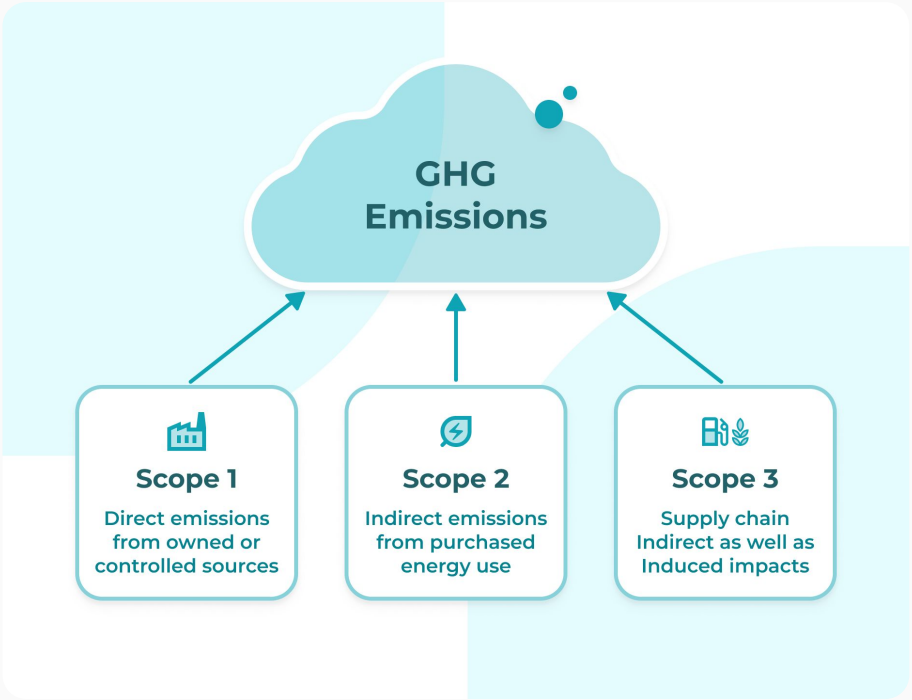


Scope 1 — Direct emissions from owned or controlled sources

Scope 2 — Indirect emissions from energy consumption by the direct business/company

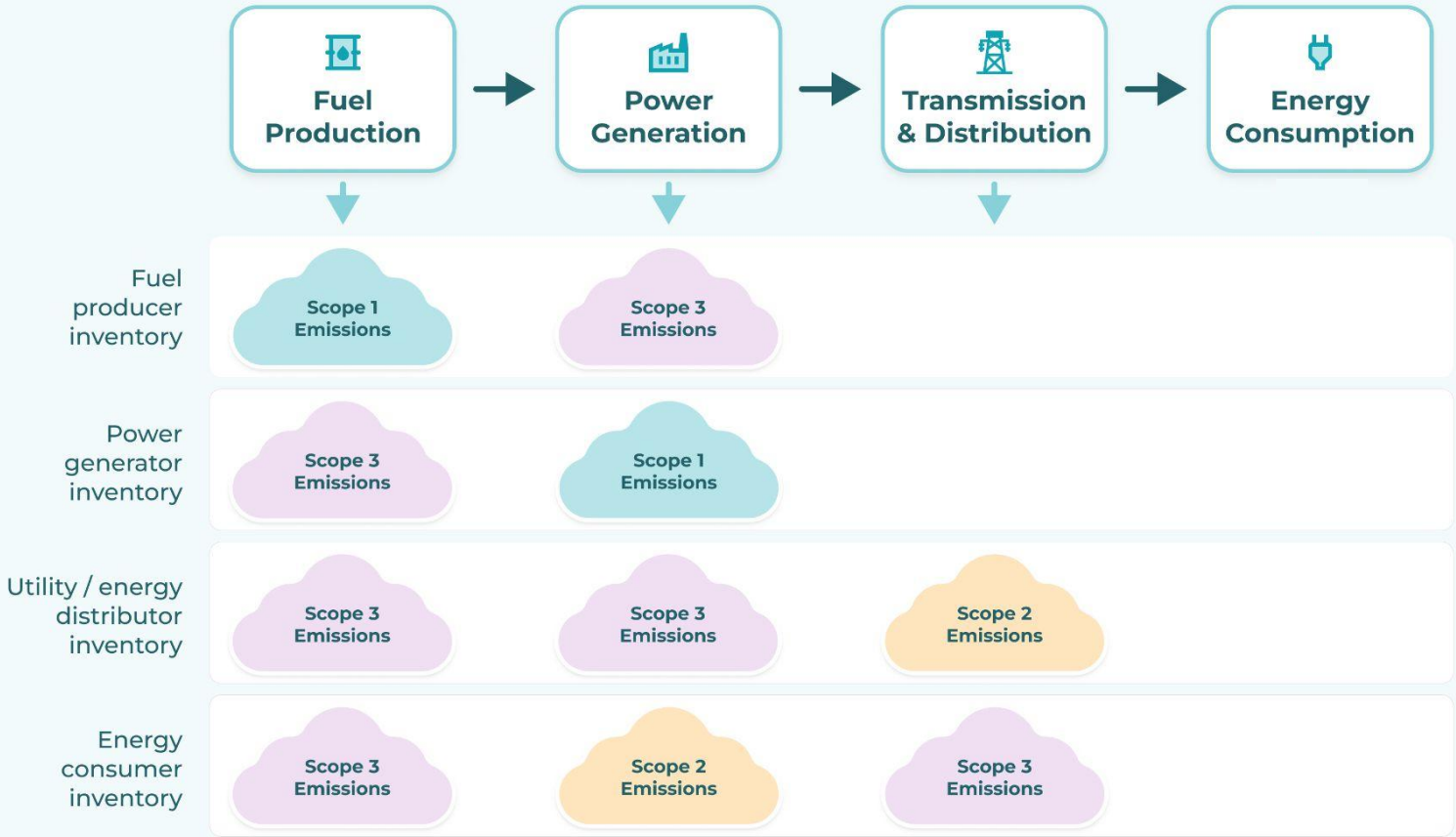
Scope 3 — Other emissions due to activities from assets not owned or controlled by the reporting organization, such as supply chain impacts.

What Are Scope 1, 2, and 3 Emissions



IMPLAN delivers Scope 1, 2, and 3 totals across **all industries**, measured in CO_2e over **20, 100, and 1000-year horizons**. For deeper environmental benchmarking, industry-level data is available over a 100-year time span—most common time period for reporting according to the EPA.

Accounting for electricity emissions throughout the supply system

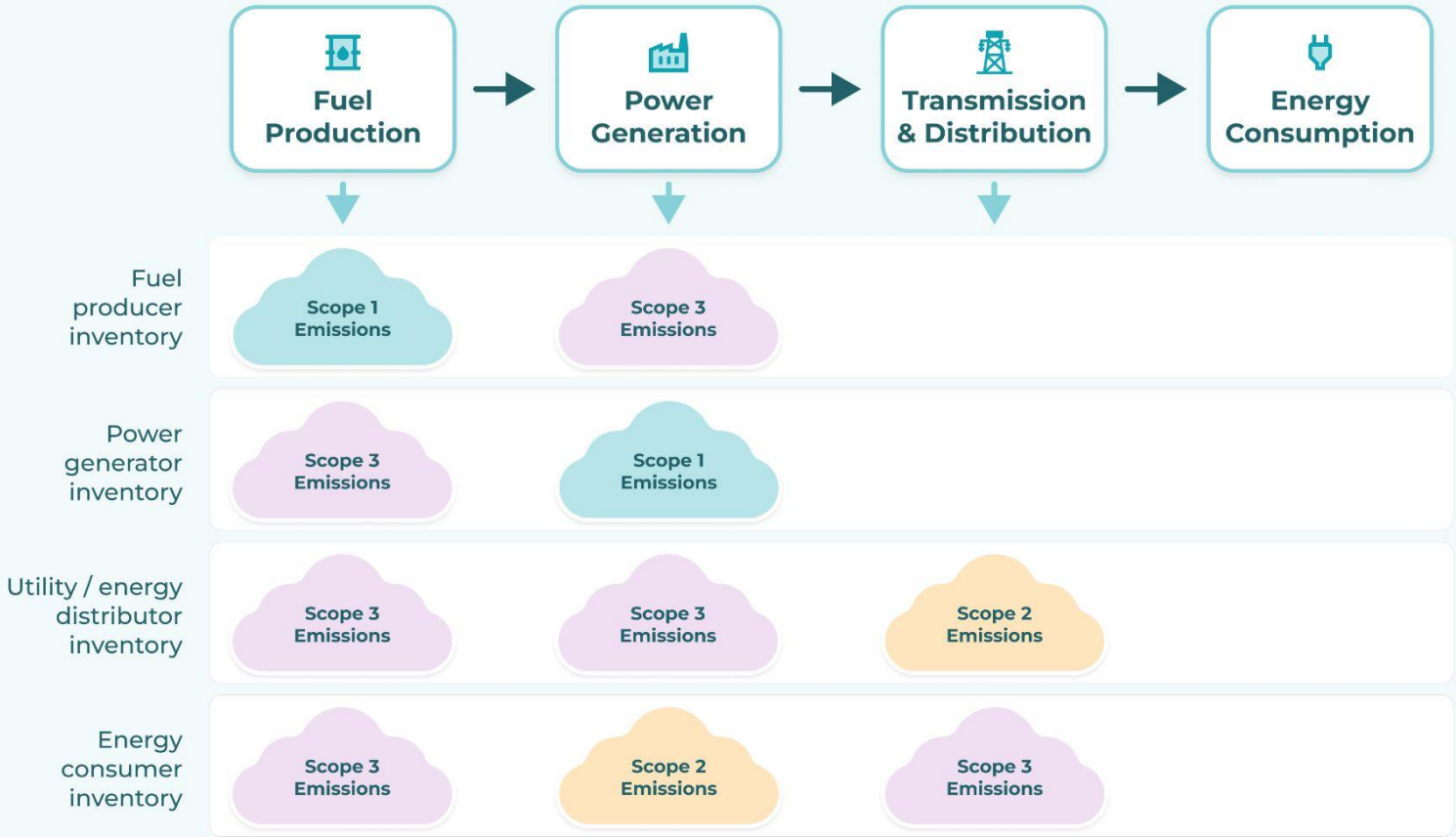


How It Works: Scope 2

- Scope 2 is capture as the Round 2 emissions in the analysis for the flagged energy industries (34-41 in the 528 unagg scheme).

- Scope 2 also includes direct emissions from utility industries (42-3, 509, 512, 515 in the 528 unagg scheme, or any industries that include one or more of these in an aggregated scheme)

Accounting for electricity emissions throughout the supply system



How It Works: Scope 3

Scope 3 in the remaining emissions associated with the impact analysis

- Indirect emission other than Scope 2
- All Induced emission Impacts
- Commodity Output Events
    - Retail, Wholesale, and Transportation Margins (downstream impacts from factory floor to consumer)
    - Direct Output from Industries that produce an impacted Commodity as a secondary commodity/byproduct

Scope 1, 2, 3 Recategorized Emissions

Environmental Impact Damages Greenhouse Gases

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Global Warming Potential by Impact

	Impact	GWP20	GWP100	GWP1000
1	1 - Direct	47,087,333.19	32,753,420.55	19,158,498.78
2	2 - Indirect	310,601,964.15	290,050,732.23	271,551,052.45
3	3 - Induced	550,686,726.02	518,840,978.26	488,953,240.63
Totals		908,376,023.35	841,645,131.04	779,662,791.86

Global Warming Potential (GWP) by Scope and Time Horizon

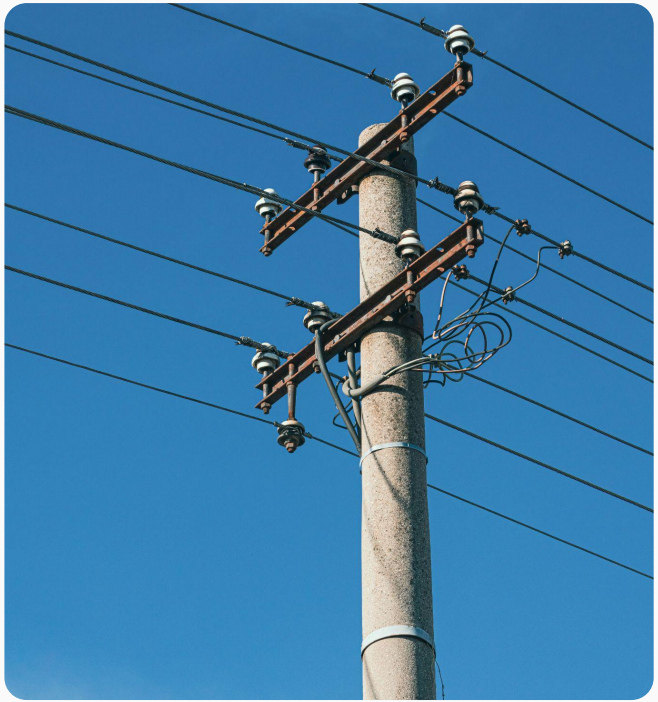
Scope	20-year GWP	100-year GWP	1000-year GWP
Scope 1	47,087,333.19	32,753,420.55	19,158,498.78
Scope 2	194,808.84	231,891.41	113,351.10
Scope 3	861,093,881.32	808,659,819.08	760,390,941.98
Total	908,376,023.35	841,645,131.04	779,662,791.86

Greenhouse gases emissions shown here are carbon dioxide equivalents in kilograms based on the given time horizon.

Why It Matters 🌎

Whether driving sustainability strategy, supporting mandate compliance, or assessing climate impact at the community level, IMPLAN's enhanced environmental data allows users to:

- Align with global emissions reporting standards
- Quantify emissions tied directly to an economic activity
- Explore long-term climate impacts with future-facing metrics
- Instantly access industry-level insights for targeted analysis



Use Case Demonstration

Industry Standard Emissions

Running a basic impact using only output to provide a benchmark for the emissions in our target industry.

Tailor Scope 2 & 3 Emissions

Industry Impact Analysis (Detailed) Events enables user production input edits to better tailor Scope 2 & 3 emissions.

Regional Energy Mix Changes

Update the model your working with to include a new makeup of energy production in the region.

This may be a hypothetical or present-day reflection of the grid.

Data Center Environmental Impacts

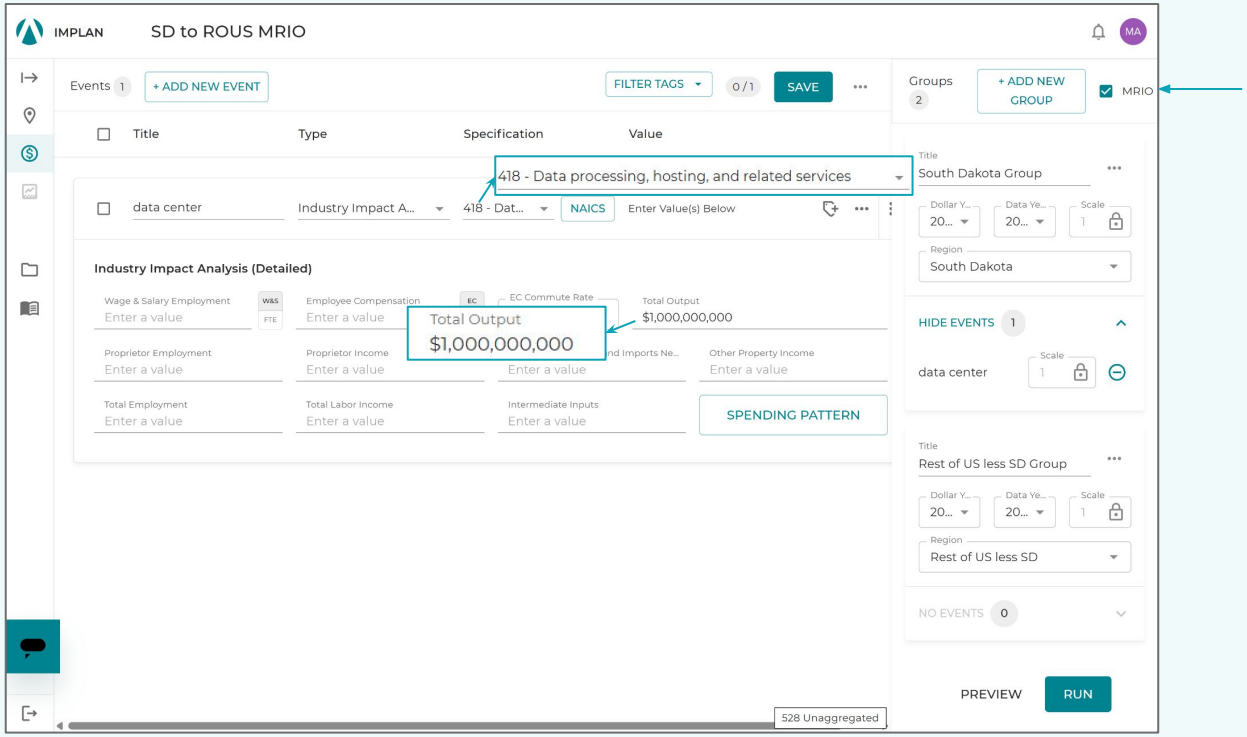
The environmental impact of data centers is a critical point for considering:

- The overall benefit of building more data center
- Where data centers should be located
- How data centers can operate more efficiently

Data centers are expanding in places like the Dakota's to take advantage of the cool weather, reducing demand on water and energy for keeping server components and the facility cool.

Data Centers in the Dakotas

Let’s look at the impact of opening a new data center in South Dakota producing $1B of services annually.



Economic & Environmental Impacts

Economic Indicators by Impact

Impact	Employment	Labor Income	Value Added	Output
1 - Direct	3,453.56	$304,968,666.61	$439,223,956.78	$1,000,000,000.00
2 - Indirect	4,151.68	$306,388,756.06	$505,599,932.33	$916,497,288.10
3 - Induced	2,962.42	$185,975,830.69	$339,878,619.53	$572,686,451.28
Totals	10,567.66	$797,333,253.36	$1,284,702,508.63	$2,489,183,739.38

Global Warming Potential (GWP) by Scope and Time Horizon

Scope	20-year GWP	100-year GWP	1000-year GWP
Scope 1	3,030,054.36	2,107,671.81	1,232,843.08
Scope 2	151,664.56	180,528.72	88,259.60
Scope 3	169,670,855.87	146,647,245.54	127,410,790.03
Total	172,852,574.79	148,935,446.08	128,731,892.70

Data Centers in the Dakotas

IMPLAN's Industry Production Functions assume a fixed input structure

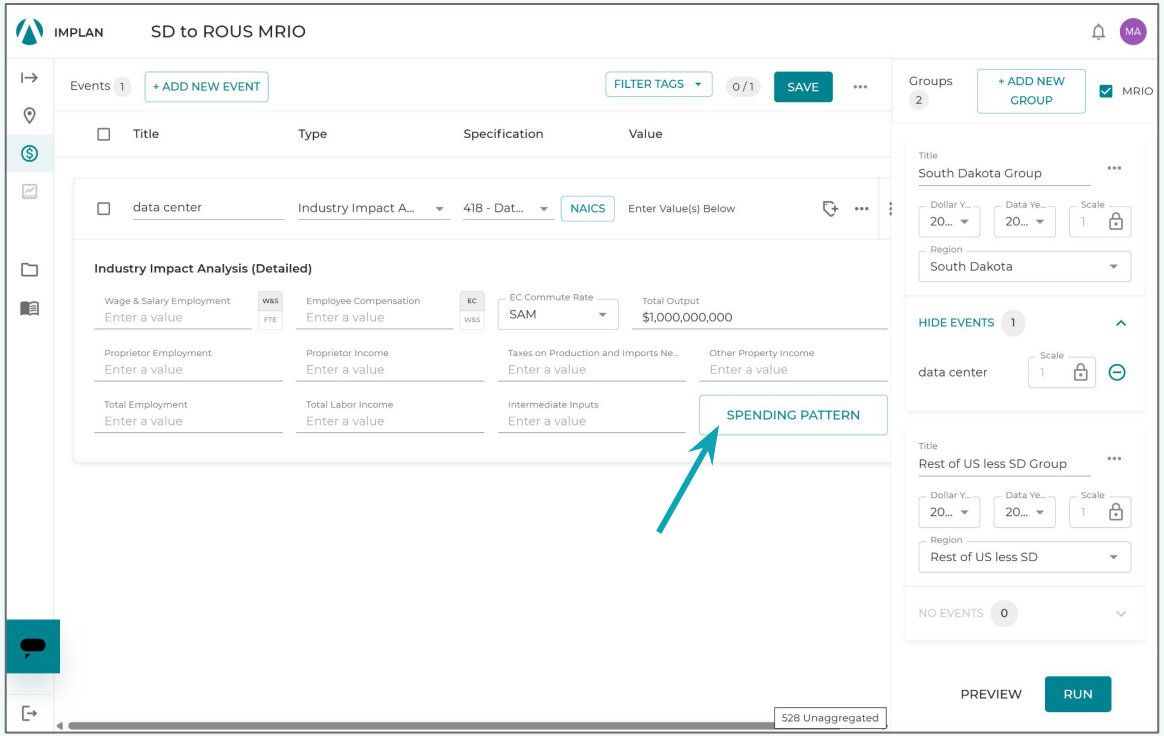
- Impacts based on regional availability of inputs
- Electricity impacts based on the distribution of energy production across types

Let's model the data centers with reduced water/cooling and electricity demand and compare the GWP impact.

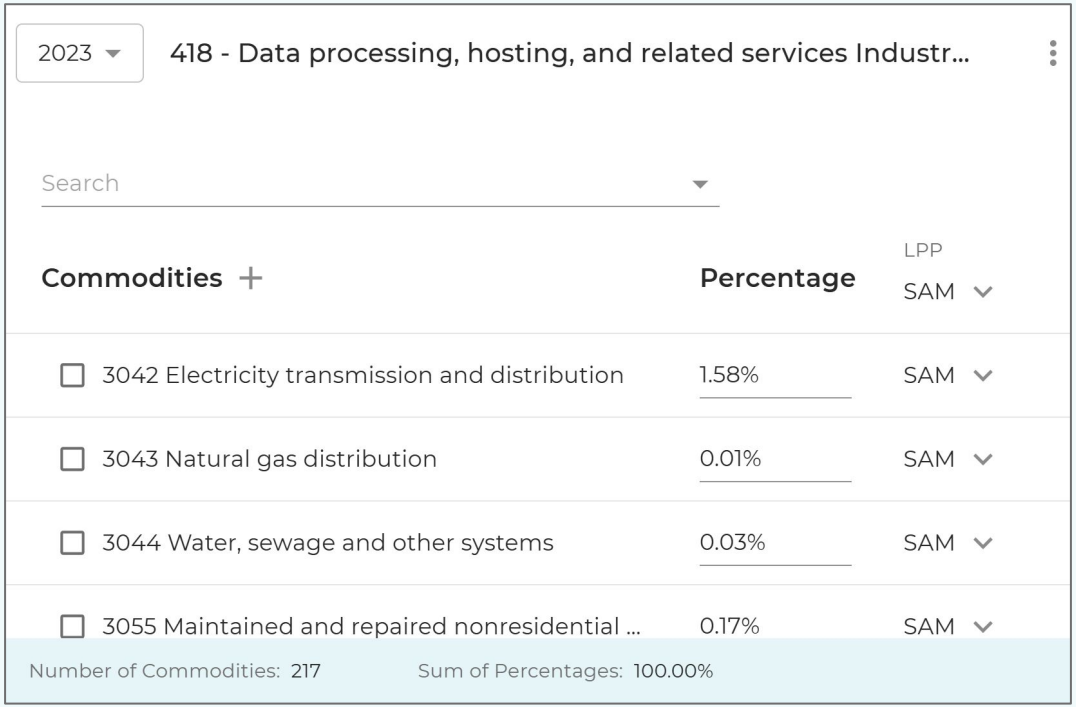
- Modify Electricity from 1.58% of inputs to 1%
- Modify Water, Sewage and other Systems from 0.03% of inputs to 0.01%

Data Centers in the Dakotas

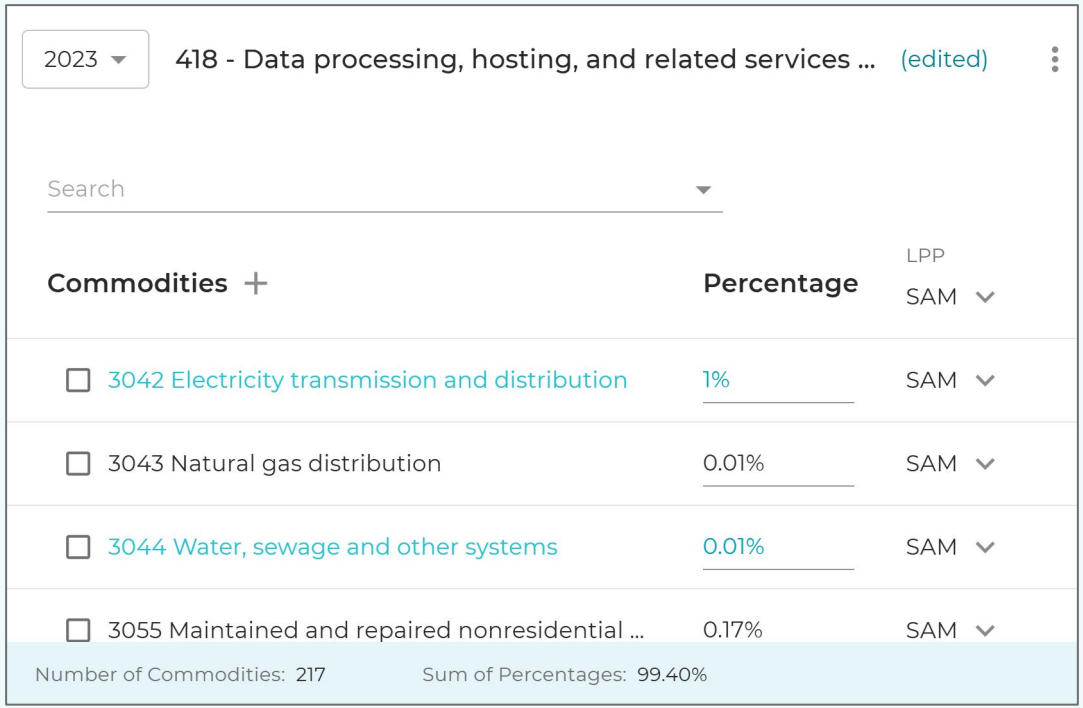
Now we'll add our Spending Pattern edits to further tailor the Scope 2 and 3 Impacts.



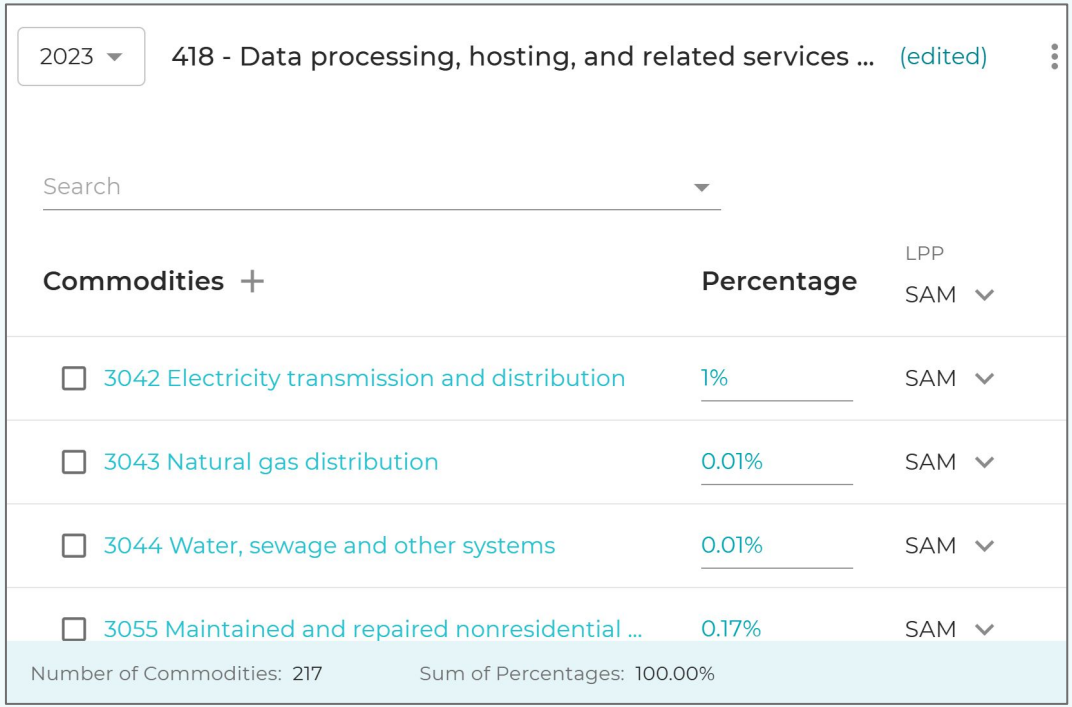
Tailoring Scope 2 & 3



Tailoring Scope 2 & 3



Tailoring Scope 2 & 3



Comparing Emission Impacts

Original Results

Global Warming Potential (GWP) by Scope and Time Horizon

Scope	20-year GWP	100-year GWP	1000-year GWP
Scope 1	3,030,054.36	2,107,671.81	1,232,843.08
Scope 2	151,664.56	180,528.72	88,259.60
Scope 3	169,670,855.87	146,647,245.54	127,410,790.03
Total	172,852,574.79	148,935,446.08	128,731,892.70

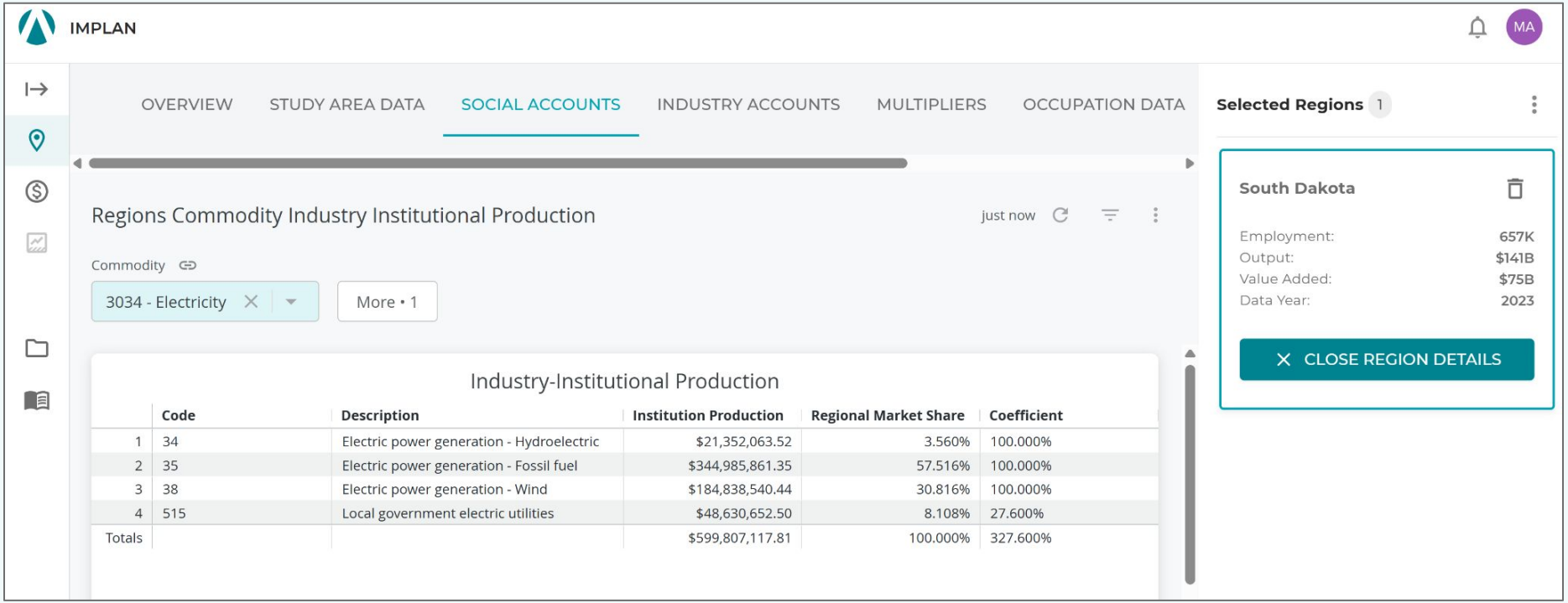
With Edits

Scope 2 ↓37%
Scope 3 ↓5%

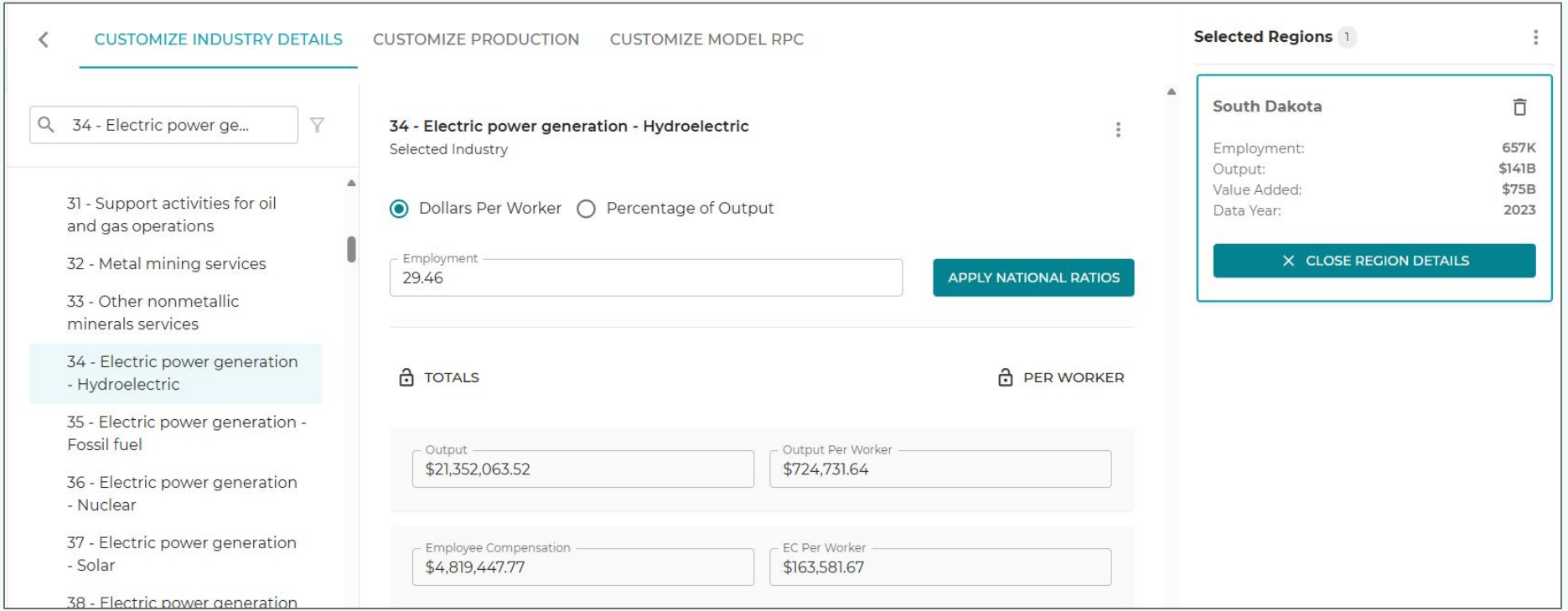
Global Warming Potential (GWP) by Scope and Time Horizon

Scope	20-year GWP	100-year GWP	1000-year GWP
Scope 1	3,030,054.36	2,107,671.81	1,232,843.08
Scope 2	96,219.05	114,531.06	55,993.67
Scope 3	160,641,825.72	138,124,059.59	119,275,188.21
Total	163,768,099.14	140,346,262.46	120,564,024.95

Current Mix of Electricity Production



Electric Power Mix Update



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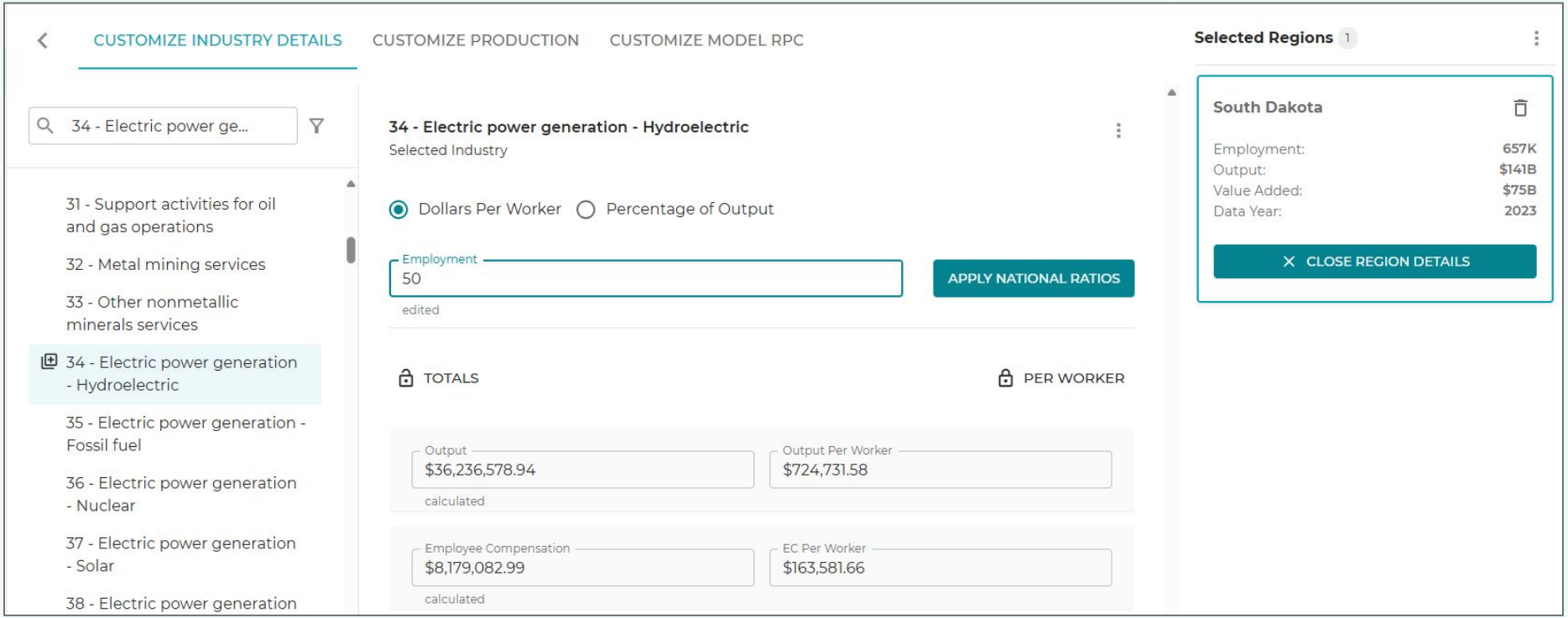

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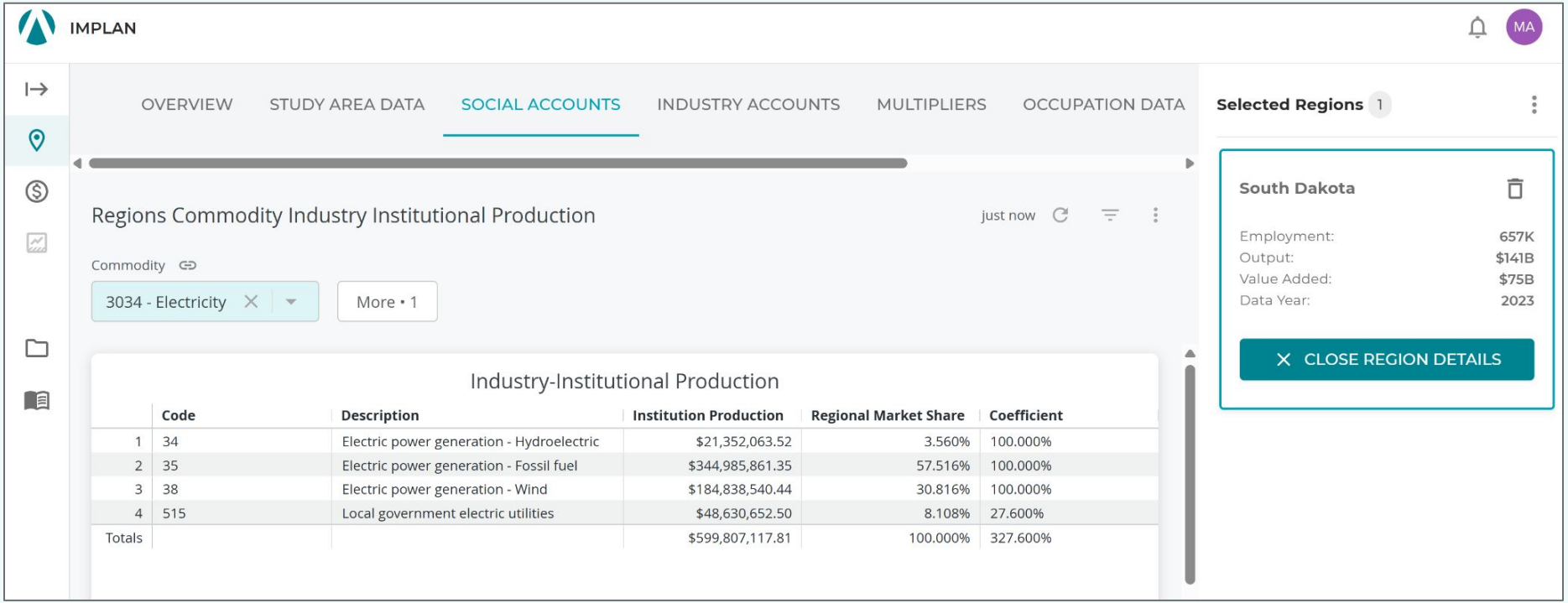

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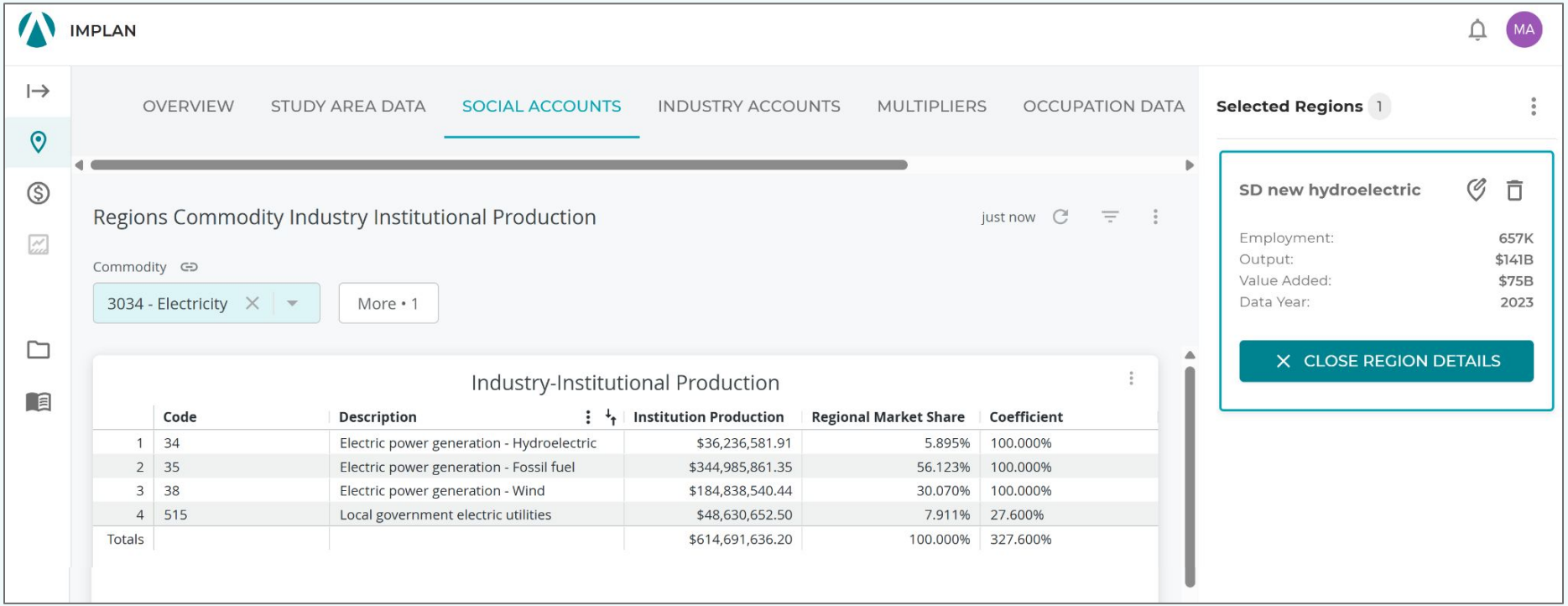
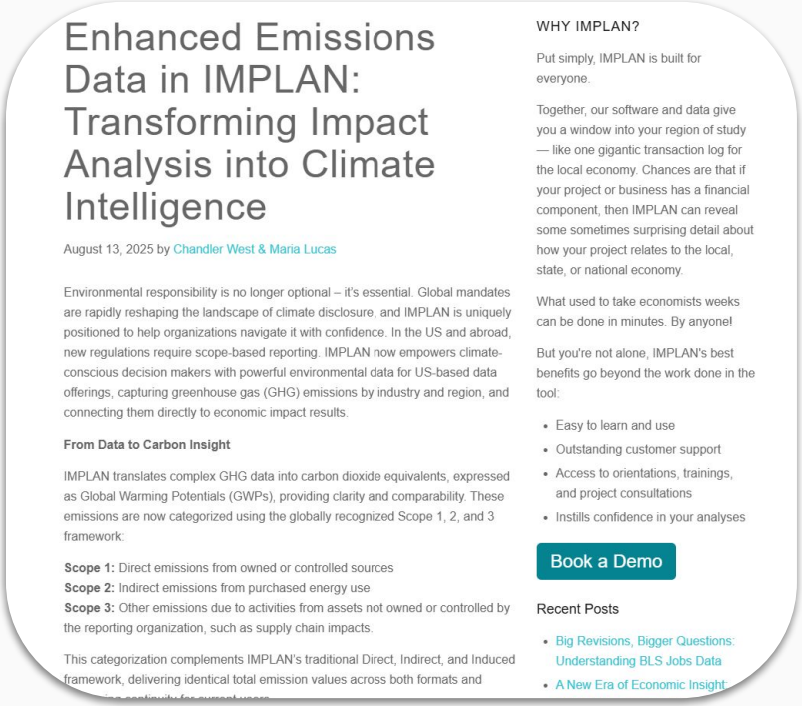


Live Q&A

Additional Resources

- Explore Support Articles at support.implan.com
- Check out our latest blog

https://blog.implan.com/emissions



Enhanced Emissions Data in IMPLAN: Transforming Impact Analysis into Climate Intelligence

August 13, 2025 by Chandler West & Maria Lucas

Environmental responsibility is no longer optional – it's essential. Global mandates are rapidly reshaping the landscape of climate disclosure, and IMPLAN is uniquely positioned to help organizations navigate it with confidence. In the US and abroad, new regulations require scope-based reporting. IMPLAN now empowers climate-conscious decision makers with powerful environmental data for US-based data offerings, capturing greenhouse gas (GHG) emissions by industry and region, and connecting them directly to economic impact results.

From Data to Carbon Insight

IMPLAN translates complex GHG data into carbon dioxide equivalents, expressed as Global Warming Potentials (GWPs), providing clarity and comparability. These emissions are now categorized using the globally recognized Scope 1, 2, and 3 framework:

Scope 1: Direct emissions from owned or controlled sources
Scope 2: Indirect emissions from purchased energy use
Scope 3: Other emissions due to activities from assets not owned or controlled by the reporting organization, such as supply chain impacts.

This categorization complements IMPLAN's traditional Direct, Indirect, and Induced framework, delivering identical total emission values across both formats and

WHY IMPLAN?

Put simply, IMPLAN is built for everyone.

Together, our software and data give you a window into your region of study — like one gigantic transaction log for the local economy. Chances are that if your project or business has a financial component, then IMPLAN can reveal some sometimes surprising detail about how your project relates to the local, state, or national economy.

What used to take economists weeks can be done in minutes. By anyone!

But you're not alone, IMPLAN's best benefits go beyond the work done in the tool:

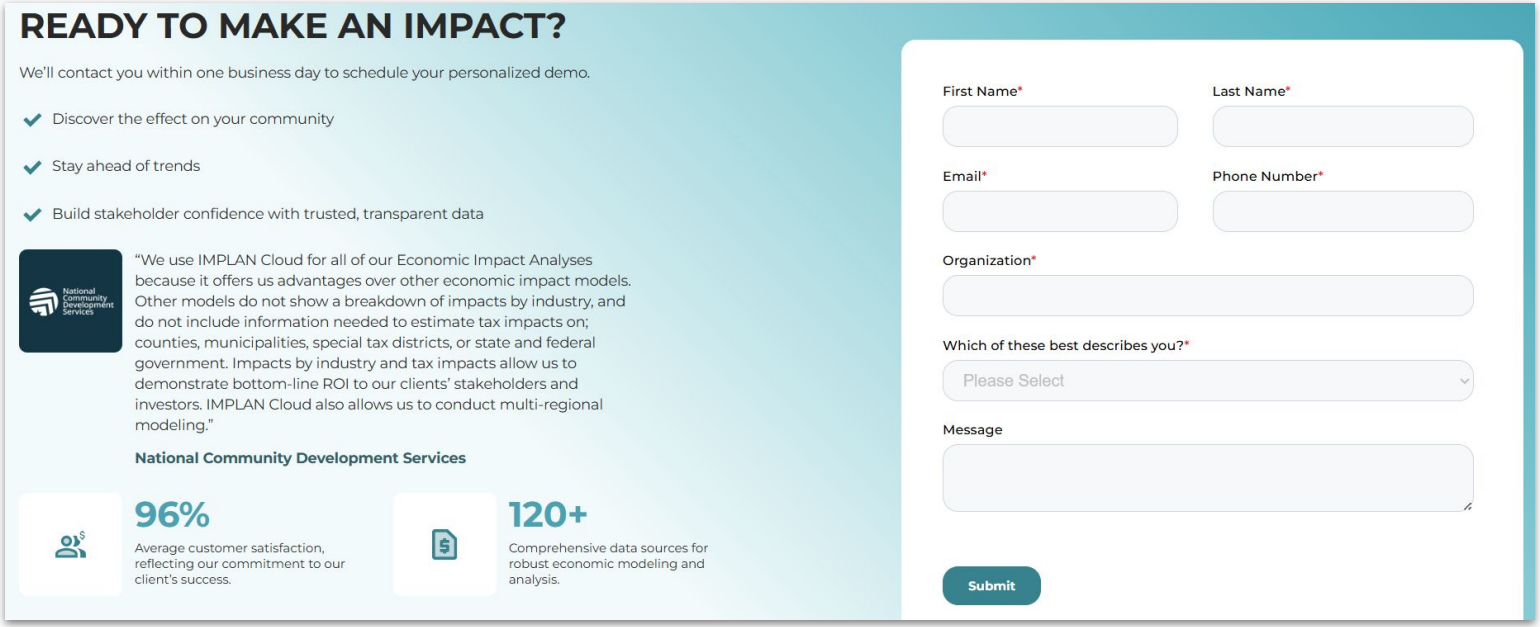
- Easy to learn and use
- Outstanding customer support
- Access to orientations, trainings, and project consultations
- Instills confidence in your analyses

Book a Demo

Recent Posts

- Big Revisions, Bigger Questions: Understanding BLS Jobs Data
- A New Era of Economic Insight:

Let’s Schedule A Demo



- Contact us at implan.com/demo-request/ to learn how IMPLAN can add value to your organization.
- After you submit the form, schedule a time that’s most convenient for you

Thank You!