

Most Relevant Solutions

- #2 Wind (Onshore)
- #8 Solar Farms
- #10 Rooftop Solar
- #20 Nuclear
- #30 Methane Digesters
- #34 Biomass
- #41 Solar Water
- #48 Instream Hydro
- #50 Energy Cogeneration
- #68 Waste-to-Energy
- #76 Microwind

Opportunity

- Shut Down Coal Plants
- Indiana is 2nd in nation at coal energy production
  - About 90 coal plants generate about 21.5 gigawatts

Ally

- Solar Indiana Renewable Energy Network
- Founded in 2008
  - Maintains map of 1,600+ solar systems installed throughout the state

# Electricity Generation

Opportunity

- Hydro Power
- Some existing dams can be converted to hydro power at relatively low cost
  - 22 dams could produce 791 megawatts total
  - Just 2 of these could produce 714 megawatts total

Success Story

- Bio Town Ag
- Methane digester which runs on manure from 5 farms

Opportunity

- Wind Power
- The northern half of Indiana has viable wind resources
  - Estimates of untapped wind power potential reach 118 gigawatts

Success Story

- Wind Power
- As of Q2 2019, Indiana had 2.3 gigawatts of installed wind power
  - The largest is the Meadow Lake (801 MW)

Success Story

- Wastewater Methane Digesters
- 12 around the state

Most Relevant Solutions

All

Ally

US Green Building Council - Indiana Chapter

Success Story

- Ball State University
- Largest geothermal district heat pump system of its kind
  - Cut carbon footprint in half
  - Saves \$3m/year

# Buildings and Cities

Ally

- Daniel Overbey
- Architect - practicing and teaching
  - More LEED certified square footage than anyone else in Indiana

Ally

- Shawn Naylor
- Indiana's expert in geothermal (heat pumps, district heating)

Opportunity

- Building efficiencies can get us most of the IPCC's 45% (Prof Schellnhuber)

Most Relevant Solutions

- #12 Temperate Forests
- #13 Peatlands
- #15 Afforestation
- #35 Bamboo
- #38 Forest Protection
- #51 Perennial Biomass
- #52 Coastal Wetlands

Opportunity

- Carbon Farming
- Soil needs regeneration
  - Also sequesters carbon

Ally

- Indiana Forest Alliance
- Preserves and restores Indiana's native hardwood forest ecosystems

# Land Use

Pasture Cropping  
Perennial Crops  
Intensive Silvopasture  
Microbial Farming?

Opportunity

- Preserve Peatlands
- Indiana was originally mostly wetlands. Unknown amount of peat remaining

Opportunity

- Industrial Hemp
- Just legalized in Indiana
  - 1 acre sequesters 8 metric tons CO2e/year
  - Converting 1% of Indiana's farmland to industrial hemp by 2022 will sequester 1,192,000 metric tons between 2020-2022
  - One use: alternative cement Hempcrete

## Indiana Drawdown: More

We've identified over 400 entities in Indiana already implementing Drawdown solutions. These are just a few. Explore them all with a digital, interactive map at: [IndianaDrawdown.org](http://IndianaDrawdown.org)

Most Relevant Solutions

- #3 Reduced Food Waste
- #4 Plant-Rich Diet
- #9 Silvopasture
- #11 Regenerative Agriculture
- #16 Conservation Agriculture
- #17 Tree Intercropping
- #19 Managed Grazing
- #60 Composting
- #65 Nutrient Management
- #72 Biochar

A Cow Walks Onto A Beach

Ally

- Indiana Food Scrap Initiative
- Statewide working groups in source reduction, food rescue, and food waste composting
  - Maintain statewide map of over 50 entities reducing food waste

Success Story

- K-12 Food Rescue
- Students put unopened, unwanted food in bin
  - Goes to local food pantry
  - 900+ schools participate throughout US

# Food

Success Story

- Industrial Food Waste Composting
- Collaboration between large food waste generators in Indianapolis
  - Compost purchased by original contributors

Opportunity

- Red Algae
- 880,000 cows in Indiana produces 3.52m metric tons CO2e annually
  - Red algae can reduce this 99% and reduce farmer's costs 10%
  - Greener Grazing pilot test ready by end of 2019

Success Story

- Cultivate Culinary
- Rescues food from catered events
  - Repackages into individually packaged, frozen meals
  - Sends home with low income students for weekend meals in thermal backpacks

Success Story

- Indy Veg Fest
- Large yearly event celebrating veganism
  - Focal point for plant-rich diet movement
  - Thousands of attendees and dozens of vendors

Most Relevant Solutions

- #26 Electric Vehicles
- #37 Mass Transit
- #40 Trucks
- #49 Cars
- #63 Telepresence
- #69 Electric Bikes
- #74 Trains
- #75 Ridesharing

# Transportation

Ally

- Hoosier EV Association
- Hobbyist club
  - Events throughout the year like EV test drives

Most Relevant Solutions

- #1 Refrigeration Management
- #36 Alternative Cement
- #46 Water Saving (Home)
- #47 Bioplastic
- #55 Household Recycling
- #56 Industrial Recycling
- #70 Recycled Paper

Ally

- EPA GreenChill Program
- Encourages groceries and businesses to track and reduce refrigerant leakage
  - Most participating groceries go from leaking 25% annually to 10%

# Materials

Ally

- Indiana Recycling Coalition
- Membership organization for any entities in circular economy

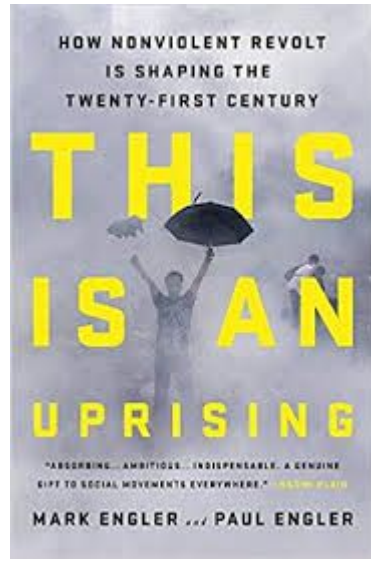
Opportunity

- More groceries in GreenChill program
- About 400 grocery stores in Indiana
  - Only one participates

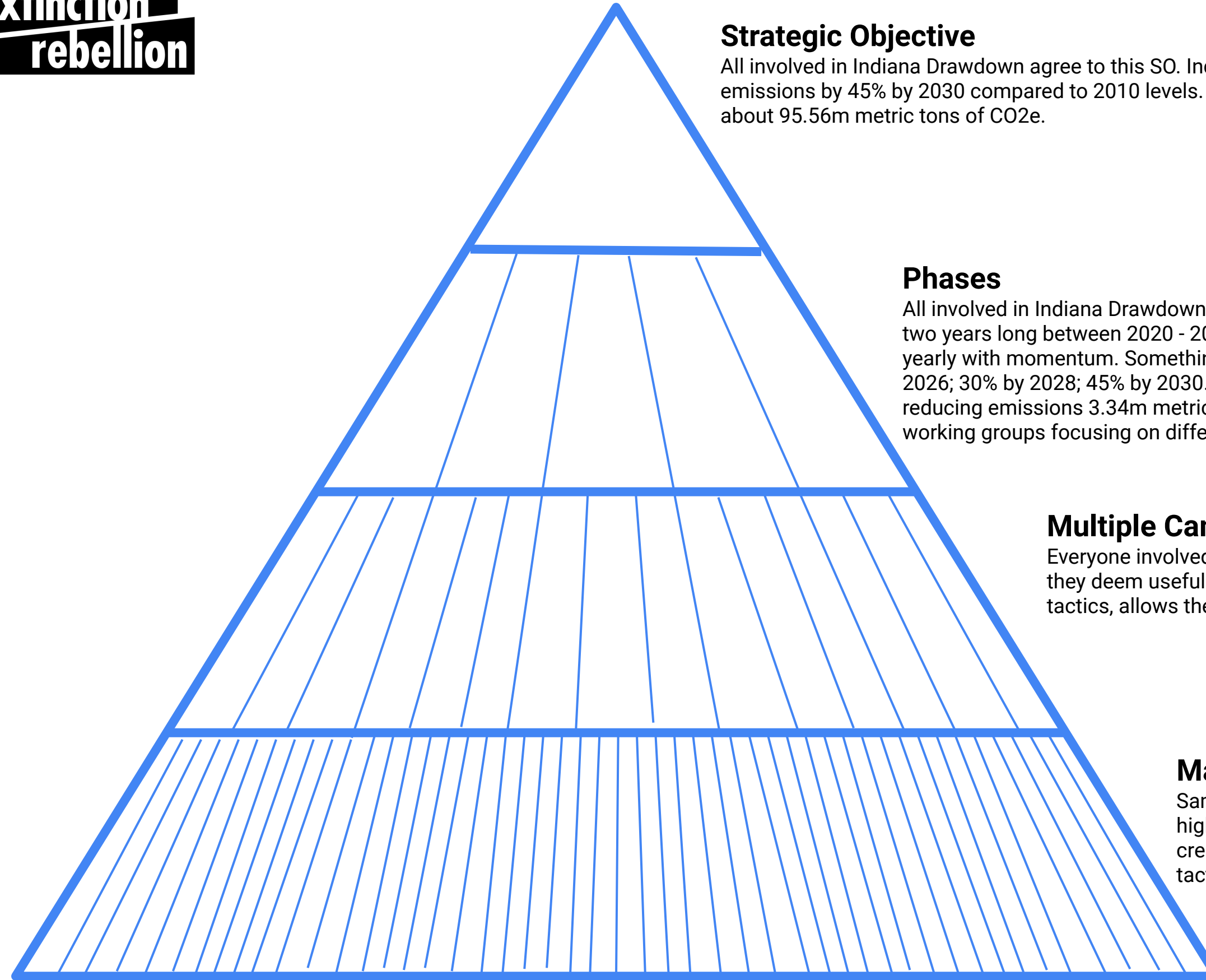
# Indiana Drawdown: How We'll Grow A Movement

## Source

Training by Momentum. Used by Sunrise to go from 8 to 100K+ participants in just a year. Hybrid of Saul Alinsky's slow, organization building approach (labor movement) and massive mobilization approach (DREAMers).



extinction rebellion



### Strategic Objective

All involved in Indiana Drawdown agree to this SO. Indiana will reduce GHG emissions by 45% by 2030 compared to 2010 levels. Source: IPCC. This is about 95.56m metric tons of CO2e.

### Phases

All involved in Indiana Drawdown agree to these phases. Probably five, each two years long between 2020 - 2030. GHG emission reduction to increase yearly with momentum. Something like: 5% by 2022; 11% by 2024; 19% by 2026; 30% by 2028; 45% by 2030. Phase 1 between 2020-2022 would be reducing emissions 3.34m metric tons over 2010 levels. Achieved with multiple working groups focusing on different Drawdown solutions.

### Multiple Campaigns

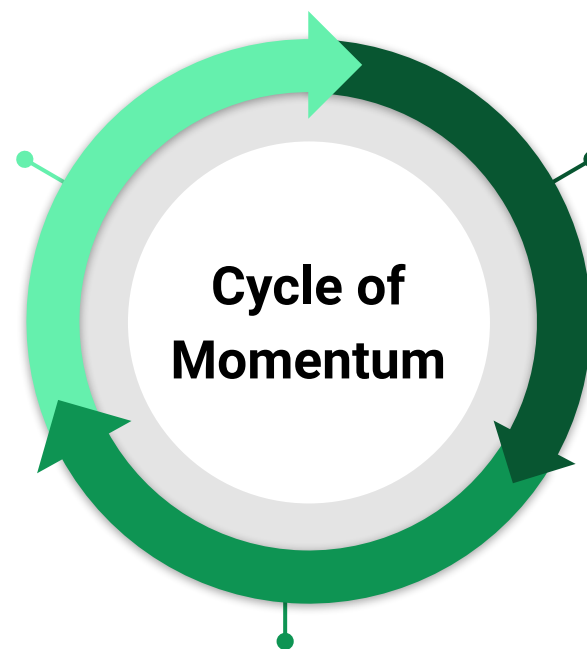
Everyone involved in Indiana Drawdown can work on whatever campaigns they deem useful. Locked in SO and Phases, yes flexible campaigns and tactics, allows the movement to be structured yet dynamic.

### Many Tactics

Same. All are nonviolent, win public support, highlight moral injury, fun, life affirming, designed to create great photo ops. See list of 198 nonviolent tactics created by Gene Sharpe.



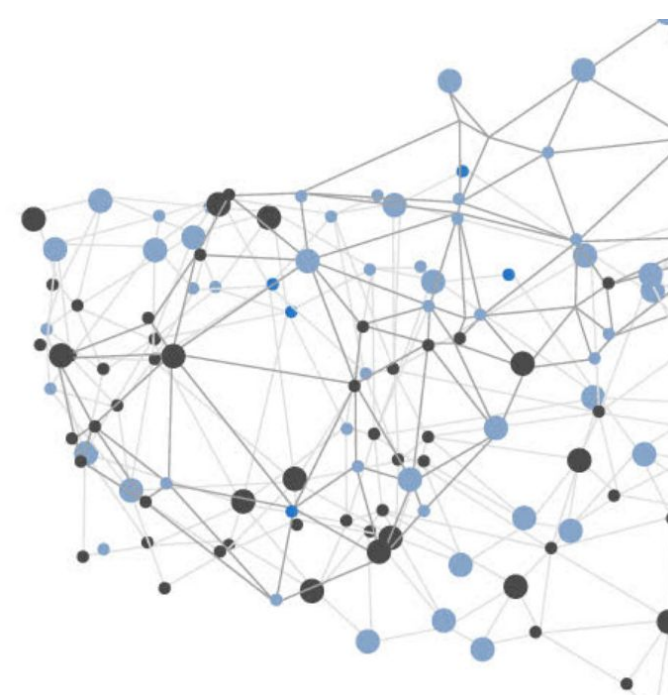
**1. Nonviolent action for public demand.** Nonviolent so everyone can participate (e.g. children, elderly, etc.). Visually striking, dramatic photo ops. Life affirming. Could be funny, satirical. Daniel will get training from Extinction Rebellion in London soon.



**2. Popular support for movement.** Media covers nonviolent action. More people discover the movement. Some want to join.

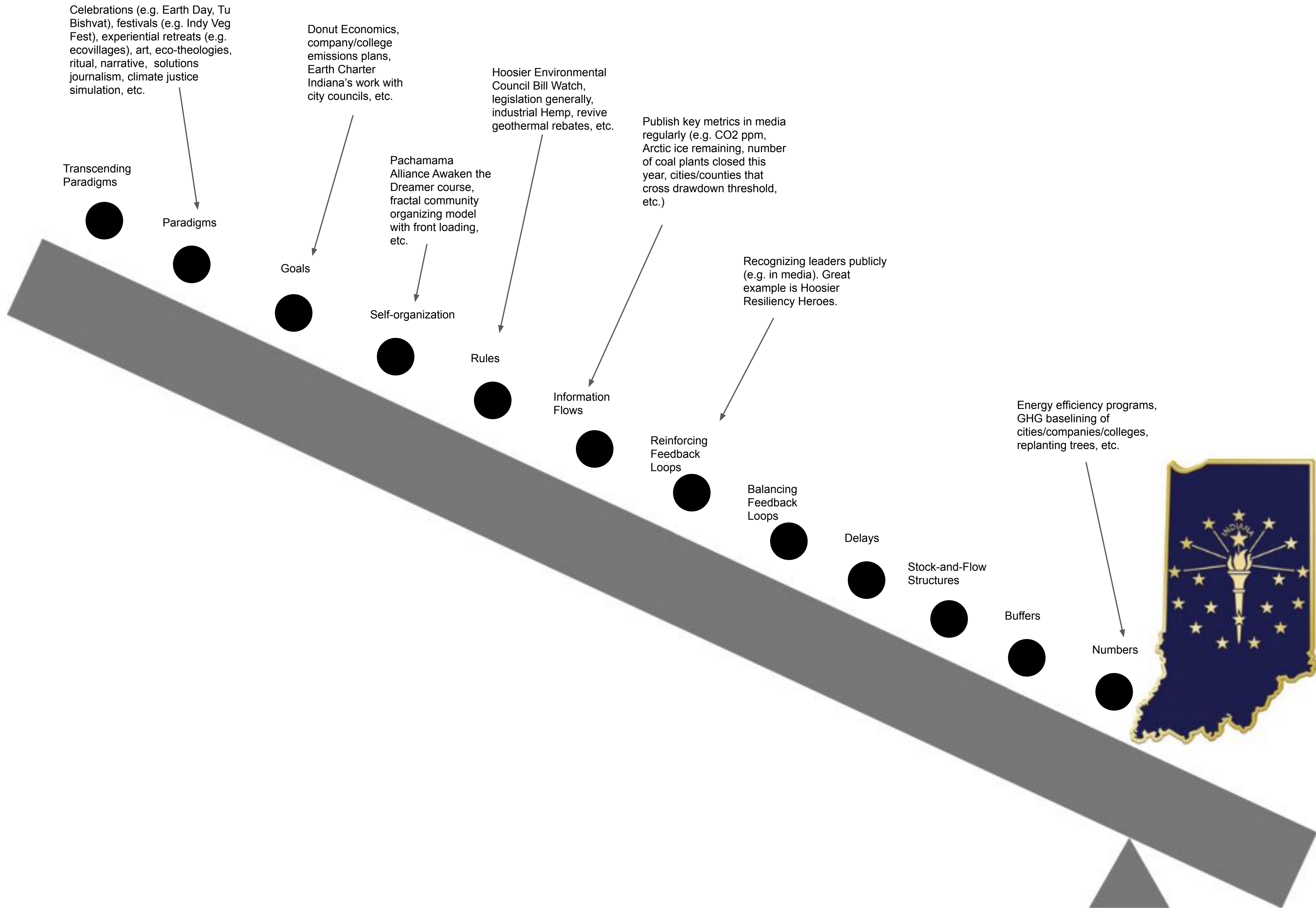


**3. Strong movement organization.** Absorb newcomers through mass trainings in which they get all of the movement's DNA at once. Train them to be independent, to make the movement their own, and to train others. As everyone involved agrees to the same Strategic Objective and Phases, yet has freedom with campaigns and tactics, this creates distributed, flexible network.



# Indiana Drawdown: Systems Analysis

“Leverage Points” by systems theorist Donella Meadows.



## More

We've identified over 100 entities in Indiana working on climate action consciously, and we've mapped them onto Donella Meadow's framework. These are just a few. Explore them all with a digital, interactive map at: [IndianaDrawdown.org](http://IndianaDrawdown.org)

# Indiana Drawdown: Two Year Plan (2020-2022)

## Strategic Objective

Reduce GHG emissions in Indiana 45% by 2030. Source: [IPCC \(p.14\)](#).

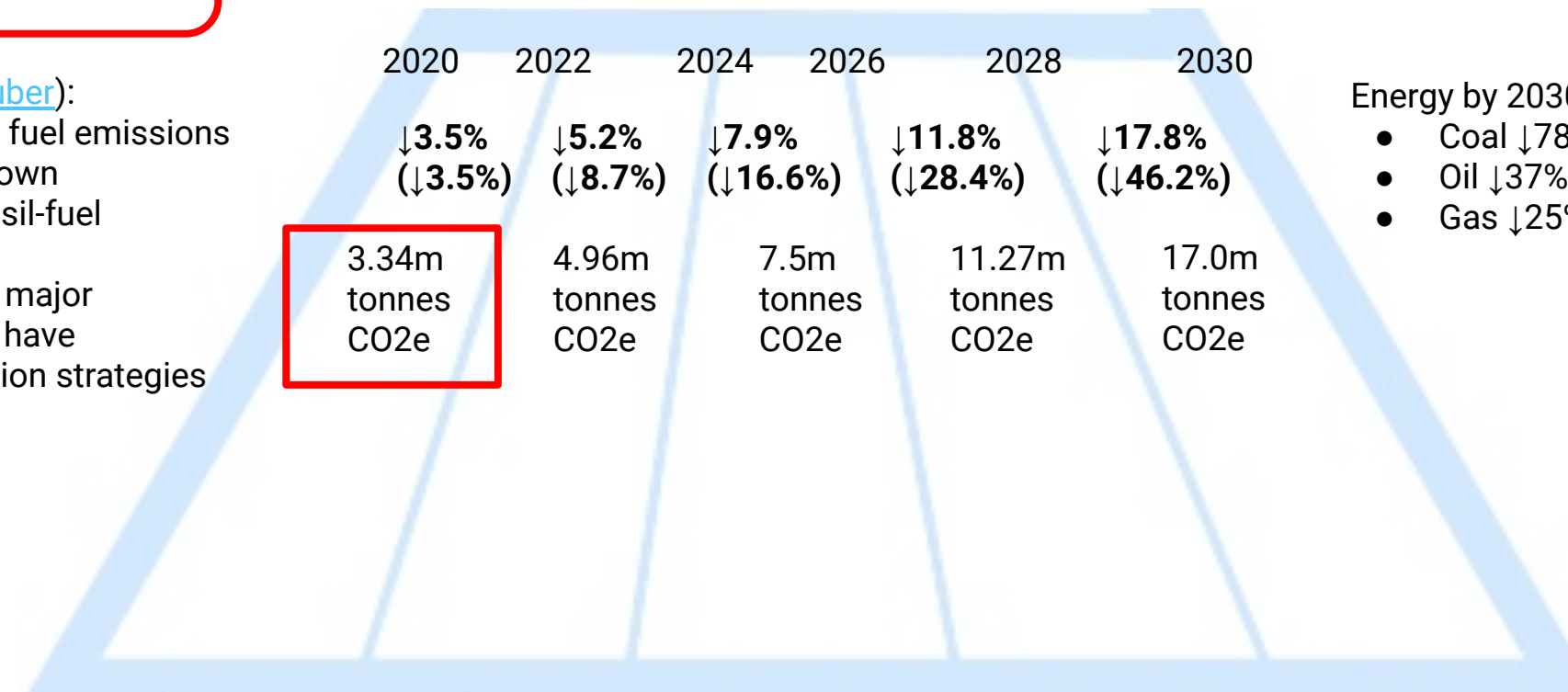
By 2020 ([Schellnhuber](#)):

- Annual fossil fuel emissions start going down
- Eliminate fossil-fuel subsidies
- All cities and major corporations have decarbonization strategies

## Phases

Greenhouse gas emissions relative to 2010 levels.

Lower emissions + sequester carbon = ↓45% (95.56m)



Energy by 2030 ([IPCC](#)):

- Coal ↓78%
- Oil ↓37%
- Gas ↓25%

| 2020   |   | 2021   |  |
|--------|---|--------|--|
| Spring | 1st Indiana Drawdown conference (outcomes: single index for collaboration, form working groups). Hosted by all relevant groups, like done in Michigan and Illinois. | Spring | 2nd Indiana Drawdown conference.   |
|        | Working groups form topical goals. Each focuses on a different Drawdown solution relevant in Indiana.   |        | Pilot carbon offset program. Indiana entities that emit to buy offsets from Indiana entities which sequester (e.g. Indiana Forest Alliance). |
|        | Finish emission baselines of ~10 cities. In progress now.   |        |  |
|        | Workshops at colleges, schools, libraries throughout state.   | Summer | Virtual, quarterly check-in with all working groups.   |
|        | Artistic direct action to raise money for Guinness record.  |        | Student summer program selling carbon offsets.   |
|        | Read and understand all major company/college GHG plans.  |        |  |
| Summer | Virtual, quarterly check-in with all working groups.  | Fall   | Virtual, quarterly check-in with all working groups.   |
|        | Expand red algae pilot to Phase 2.  |        | Expand pilot of carbon offset program.   |
| Fall   | Virtual, quarterly check-in with all working groups.  |        |  |
|        | Break Guinness record with dominos. Covered by all media in Indiana. Sets stage for public participation in Indiana Drawdown.                                       | Winter | Reduced emissions 3.34m metric tons CO2e (on track to IPCC's mandate of 45% reduction by 2030 compared to 2010).                             |
|        | Research carbon offset program using Indiana buyers/sellers.  |        | Virtual, quarterly check-in with all working groups.   |
| Winter | Virtual, quarterly check-in with all working groups.  |        |  |
|        | Facilitate virtual Drawdown study groups throughout Indiana. One already underway at architecture firm.   |        |  |

## Free Digital Resources

[IndianaDrawdown.org/resources](https://IndianaDrawdown.org/resources)

## Contact

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