Catholic Climate Covenant

Together for our Common Home

AI's Sustainability and Climate Challenges: A Catholic Response to Protect Our Common Home

February 19th, 2025

AI's Sustainability and Climate Challenges: A Catholic Response to Protect Our Common Home

RECORDING

The webinar is being recorded and a link to the recording will be sent to everyone who registered within the next 24-48 hours.

Questions

Please submit your questions in the Q/A box.

Chat

Please remember to be respectful and civil in all Chat interactions.

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PRAYER ADAPTED FROM LITANY FOR FAITHFUL ENGAGEMENT WITH AI

(Written by Bruce D. Baker, Seattle Pacific University)

God, you created the heavens and earth, and the fullness thereof. All good gifts come from you. We praise you for the bounty of creation, and for the gifts of energy, imagination, and skill to create technologies and bring them into existence. Open the eyes of our hearts to see how you are at work in us, as we develop, deploy, and use these creative gifts.

Holy Spirit, you are closer than the air we breathe. You illumine our minds with understanding. Help us to see the effects of our technologies on our neighbors, ourselves, and our relationships. Let us be guided by your commandment to love one another, so that you will be our guide to wise use of AI.

Holy Spirit, be our wisdom. Breathe life into our hopes that we may bear witness to you in creating and using AI. Give us restraint where needed to avoid destructive influences. Give us energy and strength to walk with you, and channel the power of our minds and our technologies toward righteousness. Give us the mind of Christ in the defining moments of our engagement with AI.

Lord, you are our rock and redeemer. Help us to love as you have loved.

Amen.

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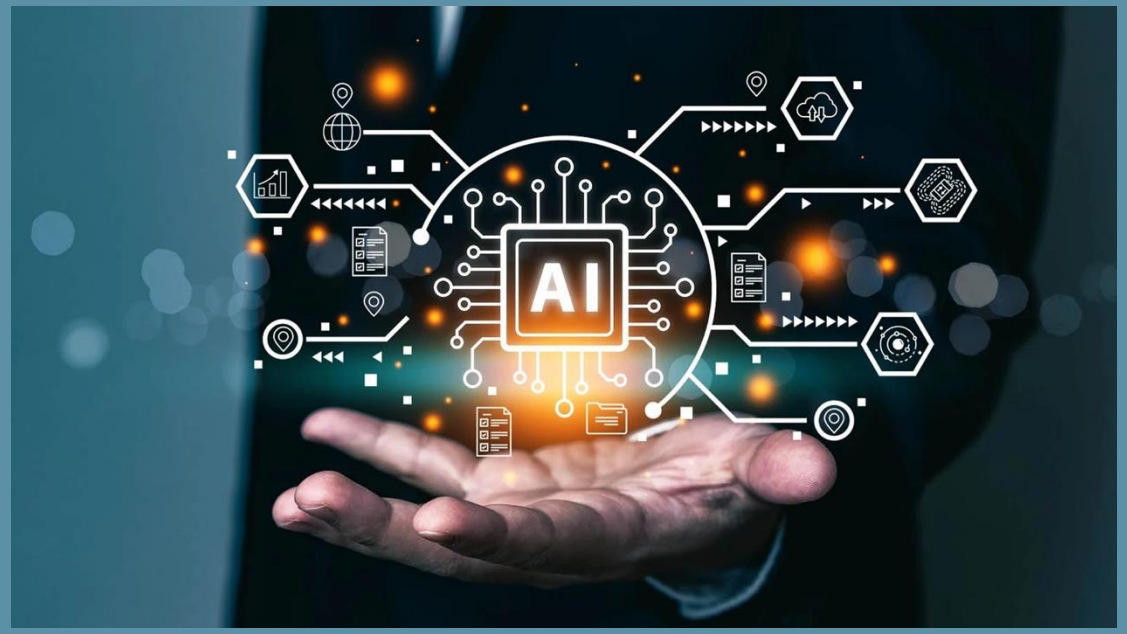
Antiqua et Nova
Note on the Relationship Between Artificial Intelligence and Human Intelligence
January 2025



Artificial Intelligence Paris Action Summit
February 10-11, 2025

Catholic Climate Covenant
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AI's Sustainability and Climate Challenges: A Catholic Response to Protect Our Common Home

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Critiquing AI From A Catholic Perspective

Céire Kealty, Ph.D.

Presentation Outline

- What is AI?
- Discuss *Antiqua et Nova*
- Ethical concerns
- Takeaways

What is AI?

ChatGPT

The Catholic Church on AI: *Antiqua Et Nova*

- Published January 28, 2025, by the Dicastery for the Doctrine of the Faith and the Dicastery for Culture and Education
- Encourages tech advancements (§2) while prioritizing harm mitigation and the promotion of the common good (§4)
- Explores AI's anthropological and ethical implications

Human Intelligence vs. Artificial Intelligence

- Human intelligence is an embodied faculty of a person in totality (§10) that **develops organically through creative growth and via lived experiences with other people** (§31).
- It is shaped by divine love (§29), and possesses an essential contemplative dimension, an **unselfish** openness to the True, the Good, and the Beautiful, **beyond any utilitarian purpose** (§29).

- AI is a technology confined to a logical-mathematical framework (§31) that **develops by being trained on human creativity** (§3). It is **a product of human intelligence** (§35).
- It is predictive, **replicative**, and relies on pattern recognition (§10).
- It is **not capable** of moral judgment. (§39)

"We can gratefully acknowledge how technology has "remedied countless evils which used to harm and limit human beings," a fact for which we should rejoice.

Nevertheless, not all technological advancements in themselves represent genuine human progress.

The Church is particularly opposed to those applications
that threaten the sanctity of life or the dignity of the human person.

Like any human endeavor, technological development must be directed to serve the human person and contribute to the pursuit of "greater justice, more extensive fraternity, and a more humane order of social relations," which are "more valuable than advances in the technical field." §38

“The responsibility for managing [the good of every person] wisely pertains to every level of society, guided by…principles of Catholic Social Teaching.”

§42

Evaluating AI Ethics w/ Catholic Social Teaching

- **Stewardship of Creation:** We are called to care for God's creation
- **Human Dignity:** Foundation of the moral vision of society
- **Dignity of Work:** protecting workers' rights (decent and fair wages, unions, etc.)
- **Option for the Poor & Marginalized:** priority for vulnerable over all else

AI's Environmental Challenges: Undermining Care for Creation

Credit: John Sirlin / Alamy Stock Photo

An aerial view of a Google data center in Council Bluffs, Iowa (Wikimedia Commons/Chad Davis Photography)

AI and Energy Demands

- Data centers are significant drivers of electricity demand growth in many regions.
- According to Goldman Sachs, data centers will use **8% of US power by 2030**, compared with 3% in 2022.
- "[We] expect incremental data center power consumption in the US will drive around 3.3 billion cubic feet per day of new natural gas demand by 2030, which will require **new pipeline capacity** to be built."

AI and Resource Depletion

- Training AI systems is a water-intensive endeavor.
- Microsoft's data center used **700,000 liters of water** while training GPT-3, and Meta **used 22 million liters of water** training its LLaMA-3 open source AI model. (WaPo)
- Meanwhile, ¼ of humankind lacks access to clean water and sanitation. (UNEP)

AI and Carbon Emissions

- **Microsoft** recently announced its **CO2 emissions had risen nearly 30% since 2020 due to data center expansion.** It has invested in ChatGPT maker OpenAI, positioning Gen. AI tools at the heart of its product offering,
- **Google's greenhouse gas emissions** in **2023 were almost 50% higher than in 2019**, largely due to the energy demand tied to data centers. (World Economic Forum)
- In July 2024, Google dropped its carbon-neutrality commitment, following its AI expansion. (Fortune)

A Catholic Response

- *Antiqua et Nova* says, "Humans live out their identity as beings *made [in God's image] b*y 'keeping' and 'tilling' creation—**using their intelligence and skills to care for and develop creation in accord with God's plan**." (§25)
- Unfortunately, "current AI models and the hardware required to support them consume vast amounts of energy and water, significantly contributing to CO2 emissions and straining resources." (§96)
- Current AI models are extractive and thus undermine care for creation. We **must** chart more environmentally-friendly ways forward with AI and other technologies.

AI's Human Challenges: Dignity & Priority

AI Impacts on Marginalized Communities

- In 2020, Google pursued **the construction of a data center** in Santiago, Chile, amid a concerning drought that threatened the country's drinking water supply.
- Residents strongly opposed the project, given Google's disclosure that the center would **consume 7.6 million liters of potable water daily.**
- Chile's weak environmental regulation infrastructure leaves the country vulnerable to predatory corporate practices and has resulted in humanitarian harms that have impacted vulnerable groups, **including Indigenous populations.**

A Catholic Response

- *Antiqua et Nova* says, "The concentration of the power over mainstream AI applications in the hands of a few powerful companies raises significant ethical concerns." (§53)
- AI's implementation prioritizes technological expansion and harms vulnerable and marginalized communities in the process. As a result, AI companies violate the **option for poor and marginalized.**

AI Training, Powered by Exploited Labor

- In 2022, a Time magazine investigation uncovered labor exploitation in OpenAI's system training processes. It found that subcontracted Kenyan data labeler-workers were paid as little as $1.32 per hour to train AI systems.
- In November 2024, CBS aired a “60 Minutes” episode similarly exposing the exploited labor still powering AI. This episode confirmed that Kenyan workers continue to be paid $1.50-$2 hourly, pre-tax to train AI. OpenAI contracts previously promised $12.50 to workers.
- Worse still, since workers must train AI systems to recognize and weed out graphic content, workers are consistently exposed to gore and other violent images.

A Catholic Response

- *Antiqua et Nova* says, "Human work must not only be at the service of profit but 'at the service of the whole human person.'" (§69)
- AI must never "reduce workers to mere 'cogs in a machine.'" (§70)
- Yet by using exploited, subcontracted labor in AI training, AI systems are undermining human dignity by perpetuating undignified working conditions.

Takeaways

- Currently, AI systems complicate humankind's pursuit of **the common good** (securing the good of the whole human community through how we organize society).
- AI reflects a human desire to "play God," so as AI systems expand, legal stopgaps and protectionist policies become necessary.
- Resources from the Catholic tradition can help inform our critiques and guide actionable responses to AI.

What future should we strive for?

- One where technological advancements **reduce, not contribute to, the exploitation of people and planet.**
- One where we use our intelligence to **grow peace and justice in the world.**
- One where our leaders **prioritize the common good over power grabs.**
- One where **we allow ourselves to be inconvenienced,** for the sake of our neighbor.

Thank You.

BROOKINGS

AI and its Potential Impacts on Climate and Environmental Justice

Manann Donoghoe, Senior Research Associate, The Brookings Institution (Mdonoghoe@Brookings.edu)

19th February 2025

A quick level set: It’s difficult to plan for what we don’t know

- This is a rapidly changing technology, and systems of governance are slow
  - Some forecasts of energy demand, but the jury is out
  - Little to no understanding of emissions, let alone climate and environmental justice

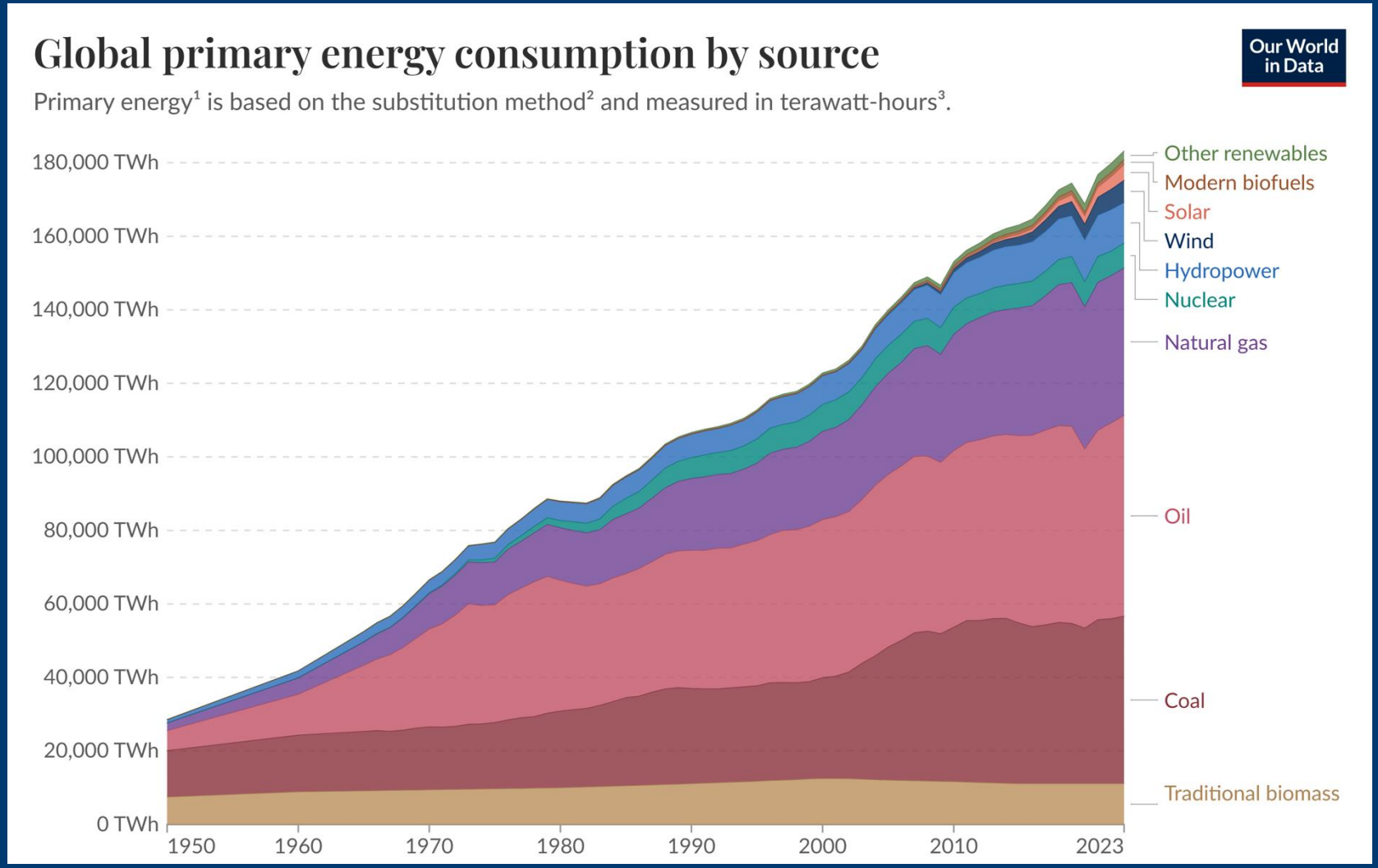
What is climate and environmental justice?

An equitable outcome is one where everyone, regardless of race, ethnicity, national origin, or income, has the right to the same environmental protections and benefits, as well as meaningful involvement in the policies that shape their communities (EPA, 2023)

Distributive

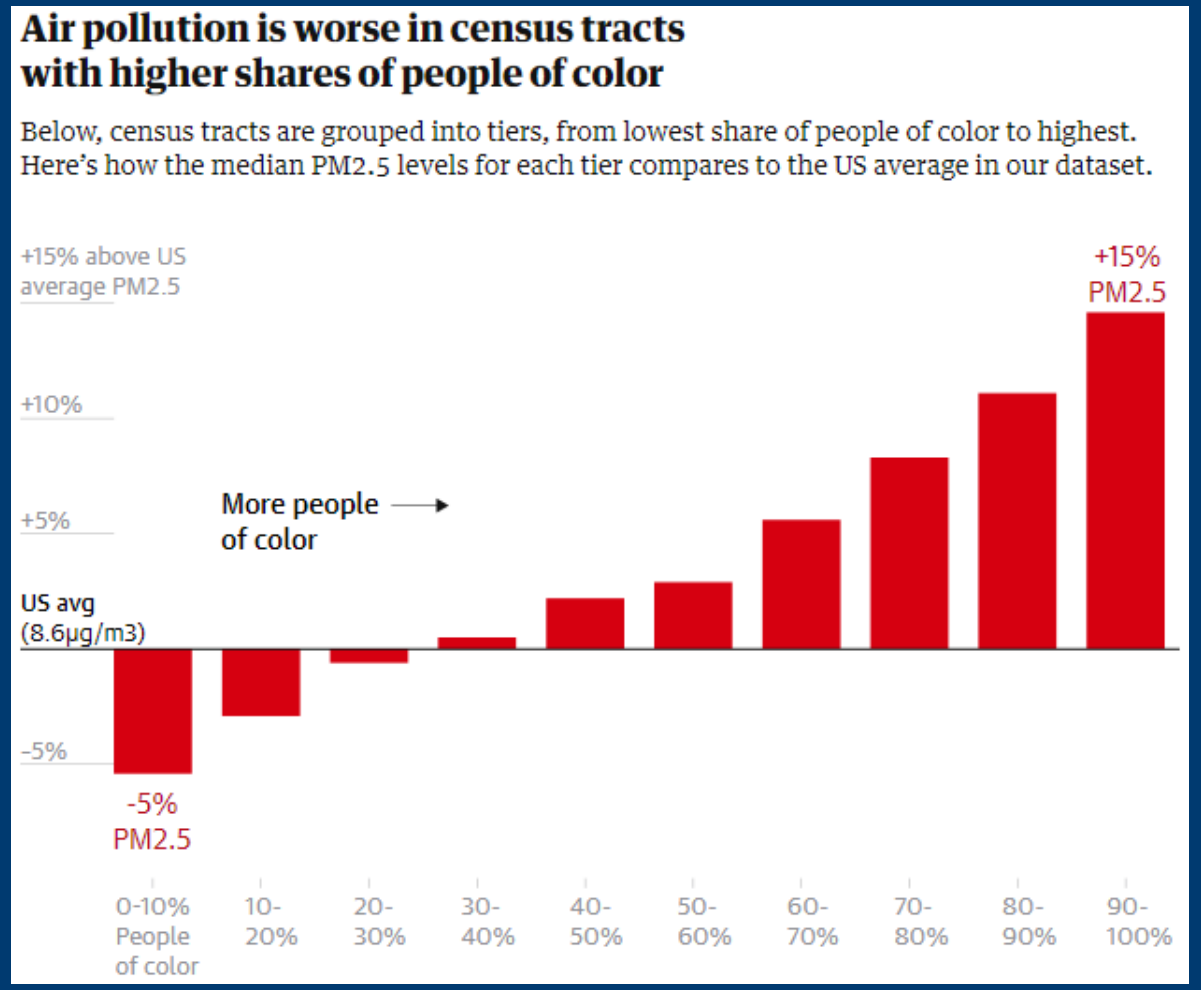
Procedural

Internationally, renewables have been an addition, not a substitution



The US has a poor history of regulating for distributional impacts

- They have distributional consequences
  - Unfold on an unequal background
  - Embedded in policy structures



"Despite their operation in a virtual space, AI and the cloud have considerable tangible effects. They will intensify greenhouse gas emissions, consume increasing amounts of energy, and require larger quantities of natural resources."

Applying a climate and environmental justice lens to AI

3 key questions

Energy use and throughput

Resource use?

Supply chains?

Energy demand?

Access, ownership, and control

How are these technologies used, for whom, and for what purpose?

Impacts on decarbonization efforts

Could AI lock in a longer time horizon for fossil fuels?

Data centers

- Broadly: A building that houses computer systems
  - High resource demand, especially water for cooling
- Rapid investment in the U.S.
  - ‘Data Center Alley’, Loudon County, VA.
    - 118 data centers in 2023
- Little knowledge of where, how many, and pressure on local grid

Local resource mix and impact on water availability

- Data centers are tethered to places
  - Local energy and resource availability, as well as heat and cold, are different

- There are wide demands for water in a city, and data centers could raise demand
  - Especially if sited in water constrained areas

Could data centers be a driver of local economic growth?

- Data centers take up physical space, but
  - Little evidence that data centers create local jobs
  - No demographic studies of the social and economic characteristics of the communities where data centers are located

- Implications for knowledge storage, access, and use
  - Interaction with Indigenous data

What are the right questions from a policy perspective?

For impacts within the U.S., it's worth asking several questions:

1. Where are data centers located currently?
2. What are their current impacts on energy demand and resource use?
3. Where should they be located?

BROOKINGS

Give Up (Needless) AI for Lent!

[Facebook's AI-Generated 'Shrimp Jesus,' Explained - Forbes]

Shrimp Jesus – Stop the Slop!!

The best of friends

Sparkle quickly proved to be a valuable friend. It helped Alice with her schoolwork, played games with her, and they had the best time ever.

2022 children's book written by ChatGPT and illustrated by the Midjourney artificial intelligence software

Endless E-Books

Fido’s Epic Trim

There is a nobility in the duty to care for creation through little daily actions (211)

All of these reflect a generous and worthy creativity which brings out the best in human beings. (211)

We must not think that these efforts are not going to change the world. (211)

They benefit society, often unbeknown to us, for they call forth a goodness which, albeit unseen, inevitably tends to spread. (211)

Furthermore, such actions can restore our sense of self-esteem; they can enable us to live more fully and to feel that life on earth is worthwhile. (212)

Pope Francis (perhaps) considering the impact of AI on the environment.

In particular the penitential nature of Friday can be rediscovered through **abstaining**, in a spirit of penance, at least for one day of the week **from futile distractions** (real but also virtual distractions, for example, the use of the **media and/or social networks**)

There needs to be a distinctive way of looking at things, a way of thinking, policies, an educational program, a lifestyle and a spirituality which together **generate resistance to the assault of the technocratic paradigm**.

Pope Francis, *Laudato Si'*

Trump Signs Order to Bring Back Plastic Straws, Claiming Paper Ones ‘Explode’ (The Guardian, 2/10/25)

“I don’t think that plastic is going to affect the shark very much as they’re … munching their way through the ocean,” (Trump) said at a White House announcement.

Pope Francis: Don’t Throw Plastic in the Sea! (Vatican News, 7/11/21)

“Take care of the health of the sea: no plastic in the sea!” (Pope Francis) said.

Pope calls for treaty regulating AI, warning of potential for “technological dictatorship” (CNN, 12/14/23)

“(Pope Francis): Any number of urgent questions need to be asked. What will be the consequences, in the medium and long term, of these new digital technologies? And what impact will they have on individual lives and on societies, on international stability and peace?”

UK and US refuse to sign international AI declaration (BBC, 2/11/25)

“US Vice President JD Vance… told world leaders that AI was ‘an opportunity that the Trump administration will not squander’ and said ‘pro-growth AI policies’ should be prioritized over safety.”

1. Delete or disable AI-centric apps on your phone.

2. Write for yourself.

3. Don’t make silly AI-generated images.

4. Take a time-out with AI-powered games.

5. Don’t use AI tools for Internet searches.

Give Up AI for Lent!

Trump Signs Executive Order Directing US Withdrawal from the Paris Climate Agreement — Again (AP, 01/20/25)

Pope Francis Calls on World Governments to Uphold Paris Climate Accords (America Magazine, 7/06/18)

We'll (Not) Always Have Paris

6. Turn off the automated features on your “self-driving” vehicle.

7. Shut down Nannybot.

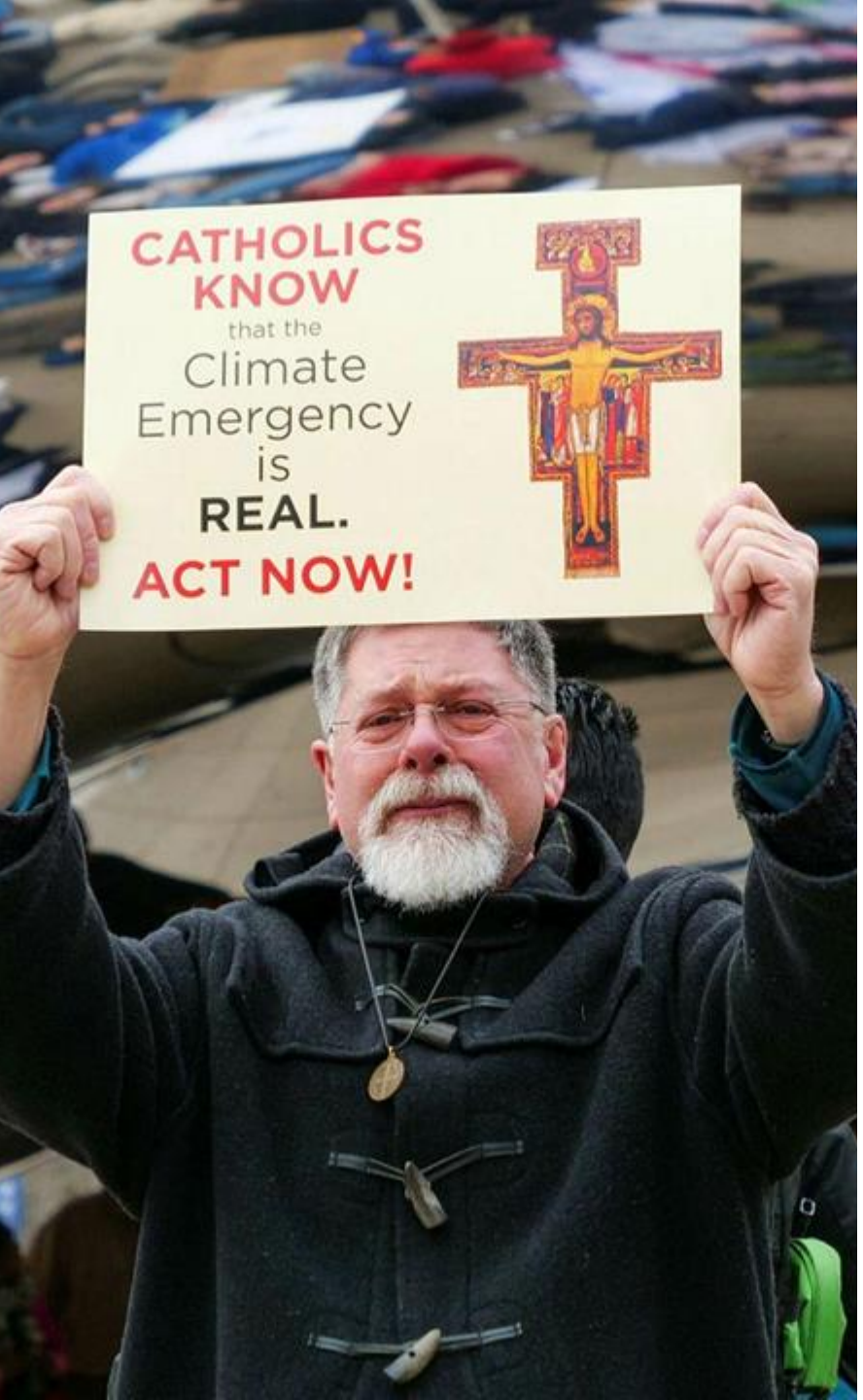
8. Patronize the arts. Go to a concert. Buy a book.

9. Minimize using AI-tools at work.

10. Church leaders: Encourage an Lenten AI detox.

Give Up AI for Lent!

Your ideas?



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