

JORGE FAZ

FOUNDER

Aquamarine Geosciences

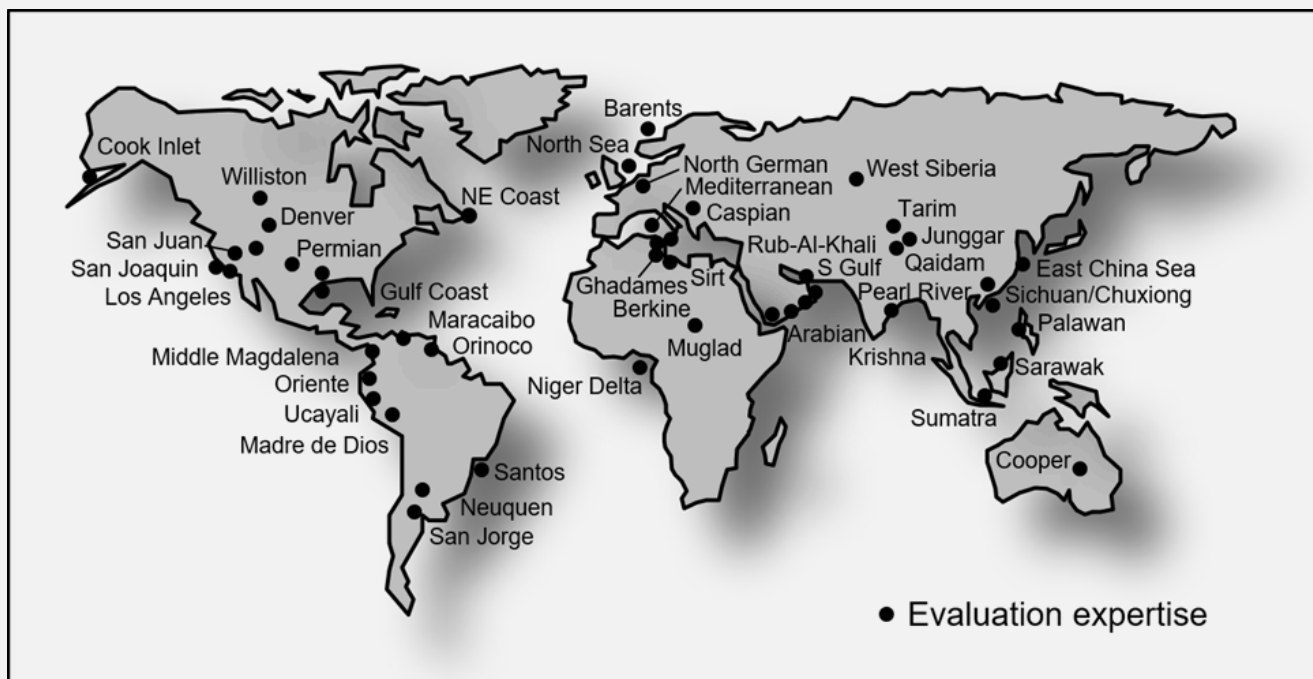


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Jorge Faz has a MSc. in Geology from Purdue University. He has over forty years of experience in exploration and production assignments, mostly with ExxonMobil and Oxy. Jorge spent a third of his career in corporate reserves, responsible for the review of reserve and resource quantities in support of annual disclosures. His experience encompasses technical and management roles in pore-to-basin scale reservoir characterization, geomodeling, field development, property evaluation, strategic analysis, due-diligence reviews, and testifying expert.



In 2020, Jorge founded Aquamarine Geosciences, an energy consulting firm and Accuscale Models, a stereolithography-based product design and prototype model manufacturer. He holds a U.S. patent for methods in CAT-Scan 3D imaging techniques for visualizing porosity systems in cores from reservoir rocks. Jorge is a certified geologist with AAPG DPA and member of SPEE. He currently serves on the SPEE authorship committee of Monograph V on Type Well Profiles. He enjoys scuba diving, archeology and photography.

DISCLAIMER

The information conveyed in the following presentation represent informed opinions about certain laws, regulations, and interpretations, but it should not be considered advice or counsel about any specific provision or topic. The applicability of the guidance provided herein should be considered on a case-by-case basis.

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Ethics, Professionalism & Everything Else

Jorge Faz

Agenda



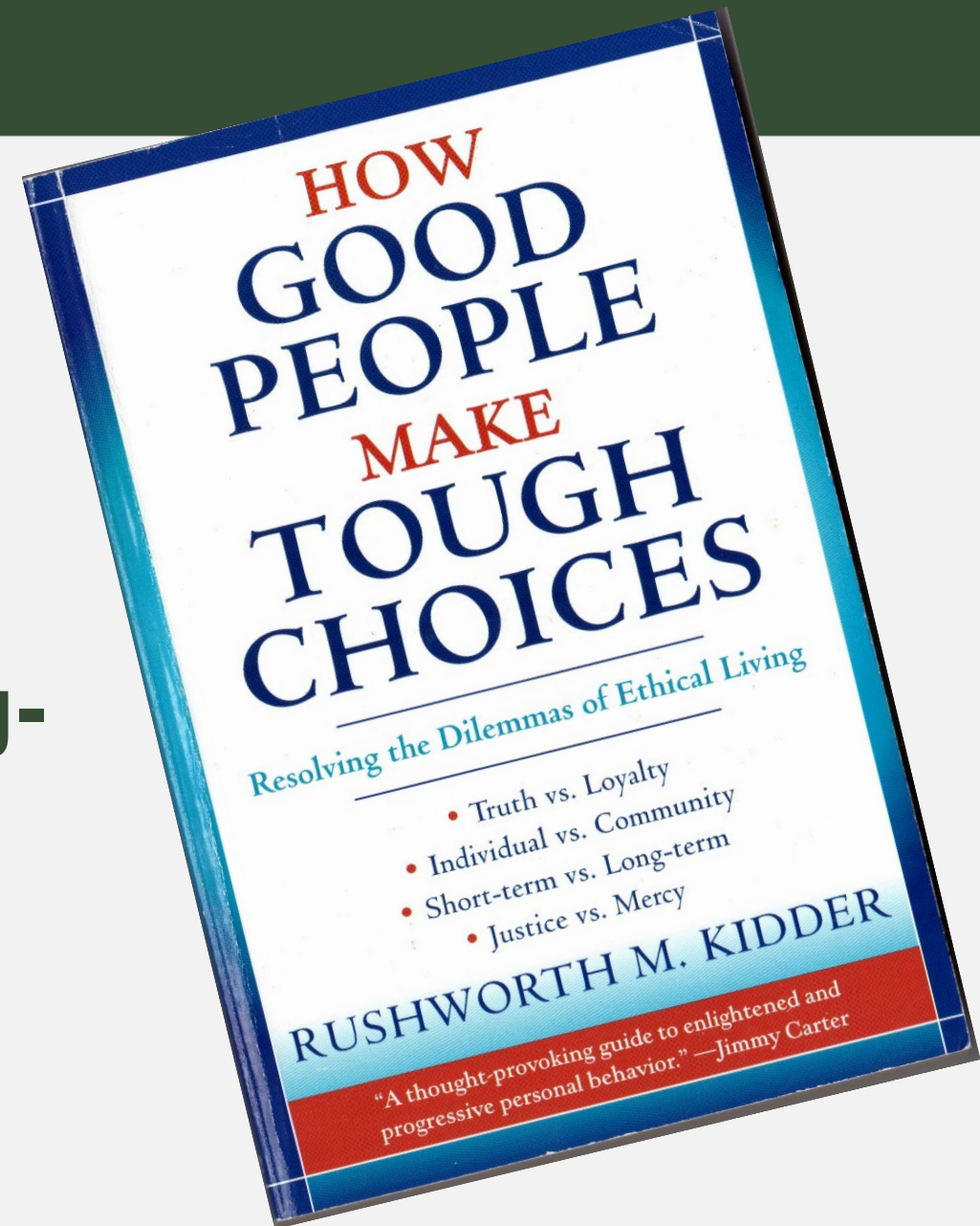
Calibration

- ***Behavioral Ethics*** studies **HOW** and **WHY** people make the ethical and unethical decisions that they do.



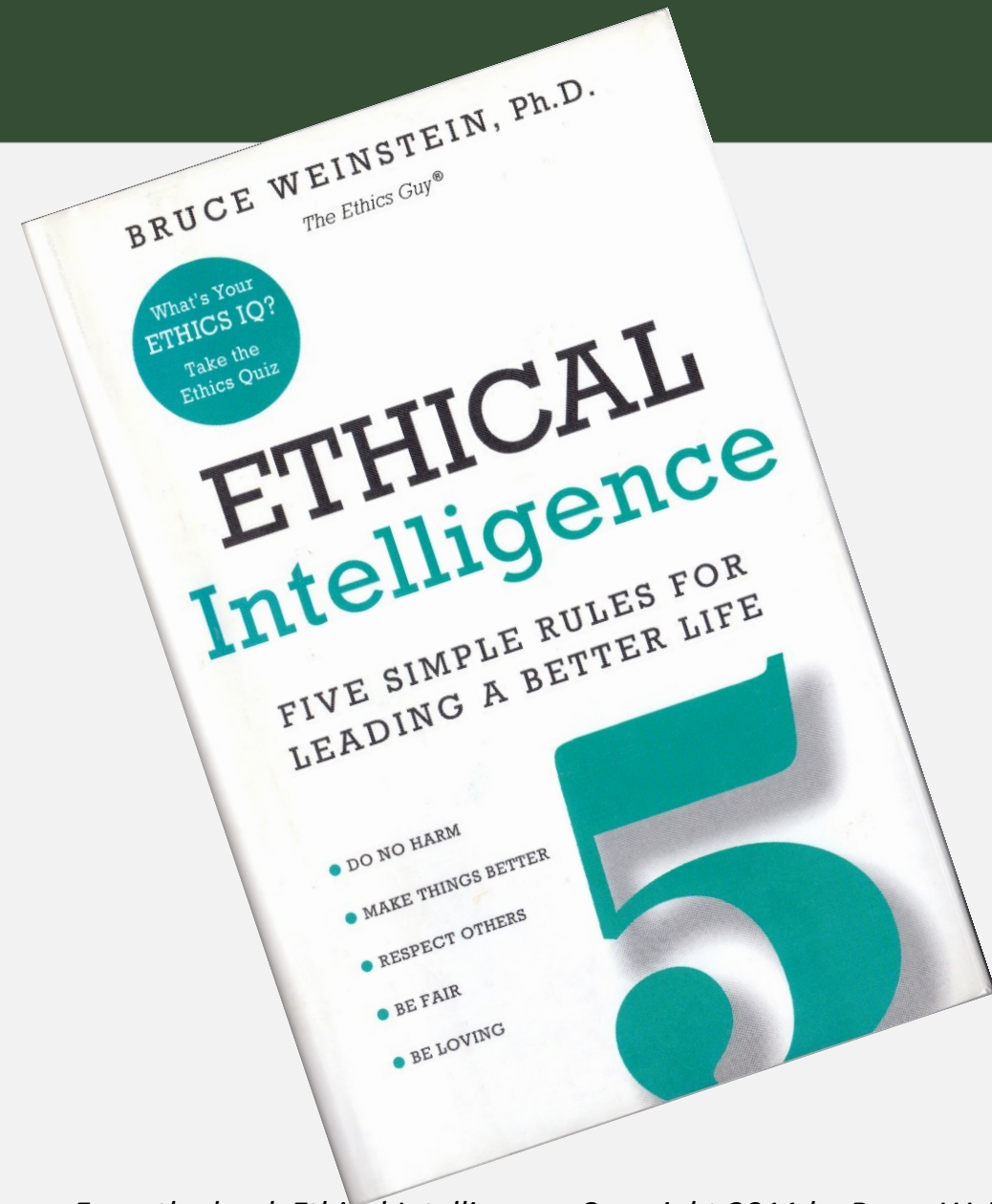
Choices

- Truth vs. Loyalty
- Individual vs. Community
- Short-term vs. Long-term
- Justice vs. Mercy



Ethical Intelligence

- Do No Harm
- Make Things Better
- Respect Others
- Be Fair
- Be Loving



*From the book Ethical Intelligence, Copyright 2011 by Bruce Weinstein, PhD
Reprinted with permission of New World Library, Novato, CA*

Perspectives

Men

- Ethic of Justice
- Rights
- Chain of command
- Formal and abstract

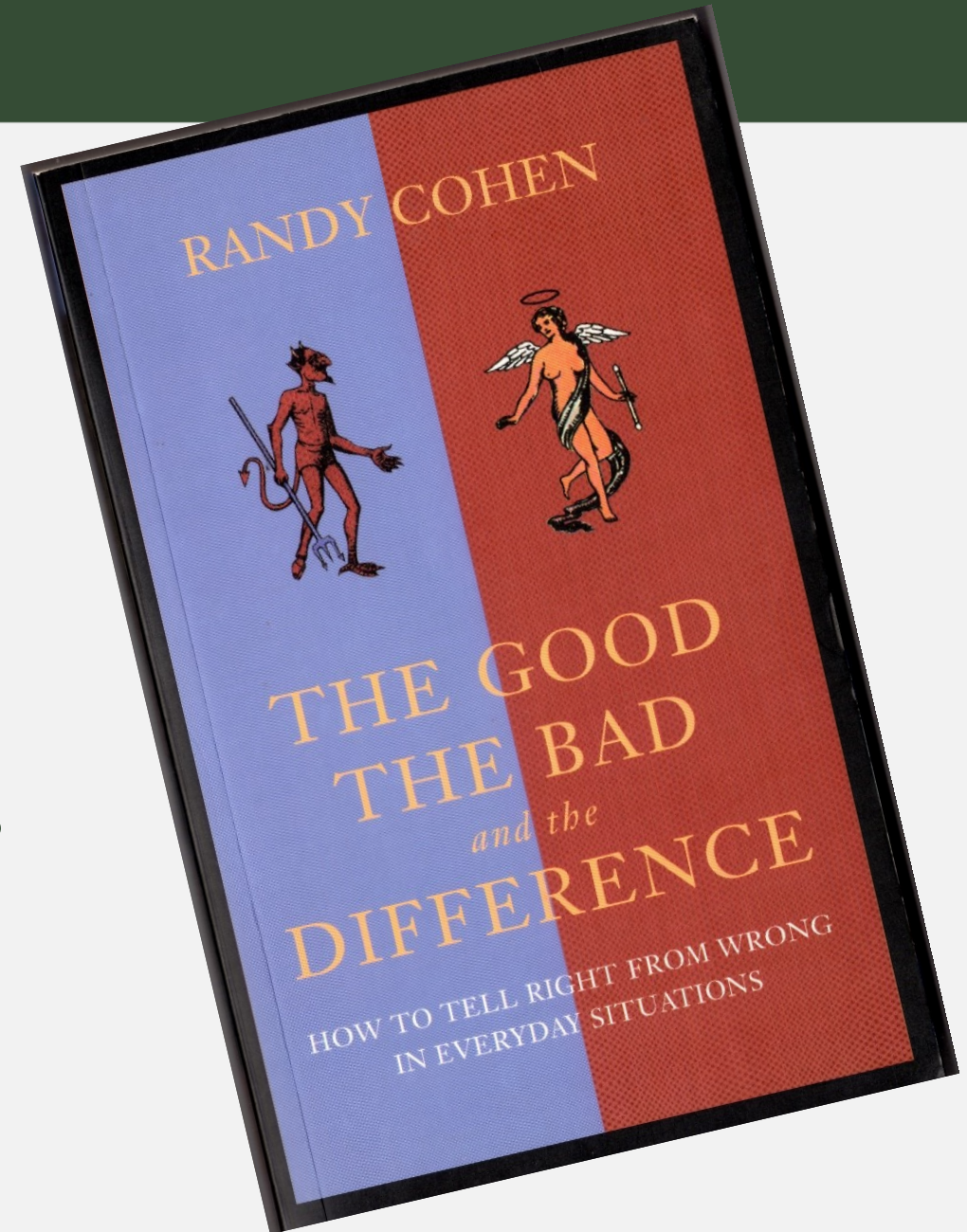


Women

- Ethic of Care
- Responsibilities
- Networks and lateral relationships
- Contextual and narrative

Ethics and Morality

- There is no solitary unethical behavior
- Ethics is doing
- How our actions affect other people
- Western and Eastern religions founded on ethical concepts



Learnings

- **Listen carefully**
- **Ethical questions are often are disguised**
- **Many times, they are not even a question**
- **They may start with..."a friend, my in-law, I heard that..."**
- **The questioner may be seeking genuine guidance**

Practice & Prepare

Image Credit: Pexels / Bruce Mars



Think of how you will deal with such a situation. Go thru the mental exercise of knowing (and practicing) your response and actions.

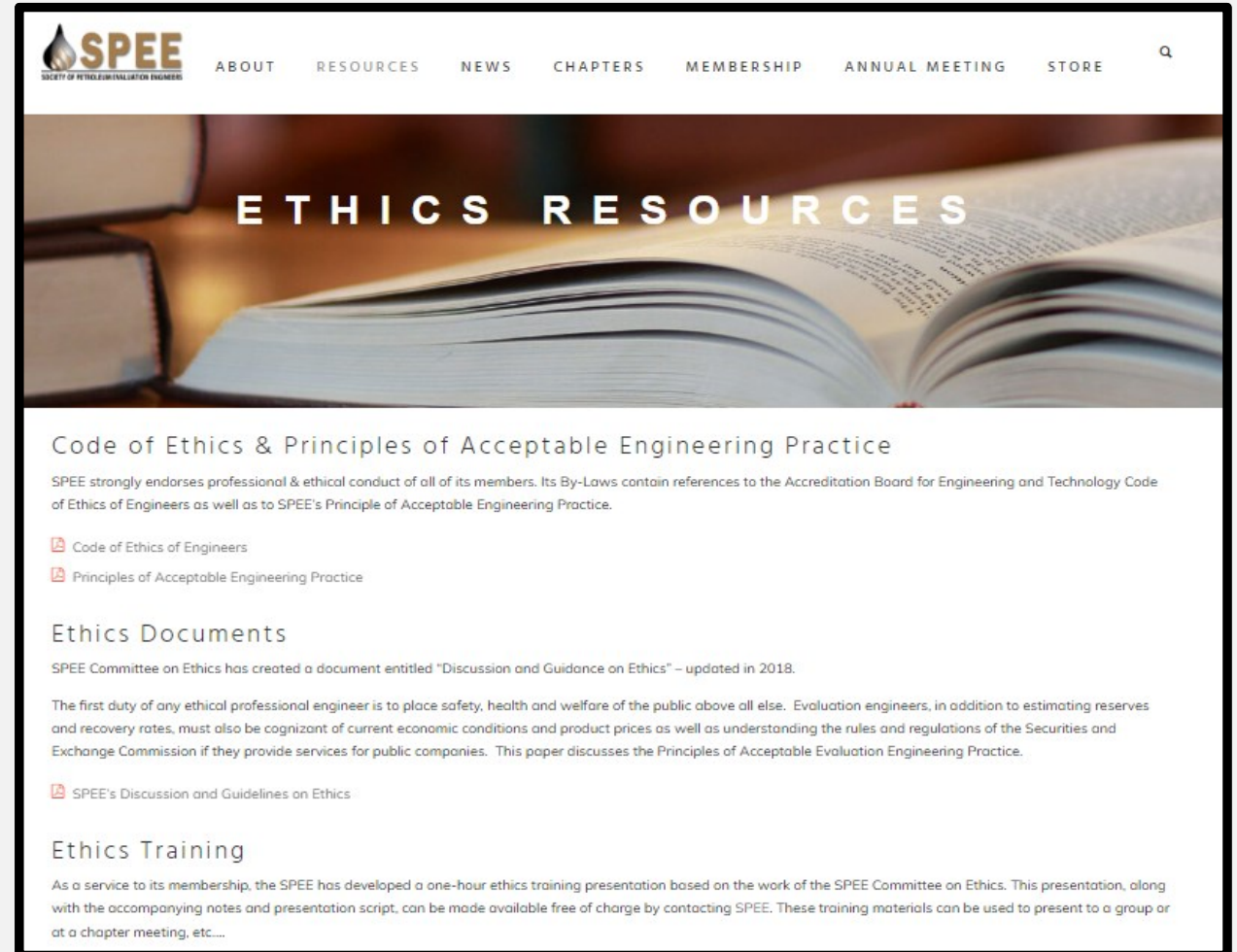
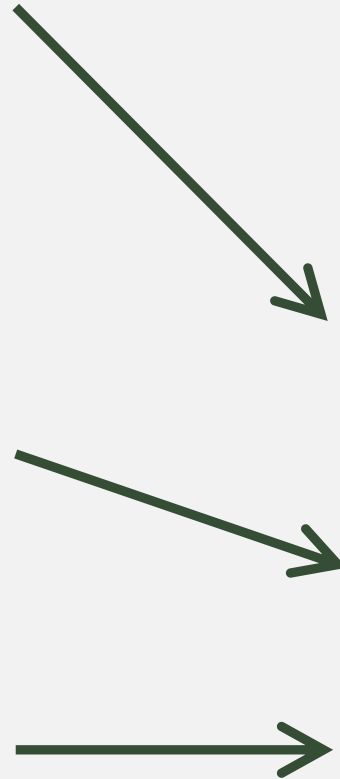
Resources

spee.org/ethics-resources

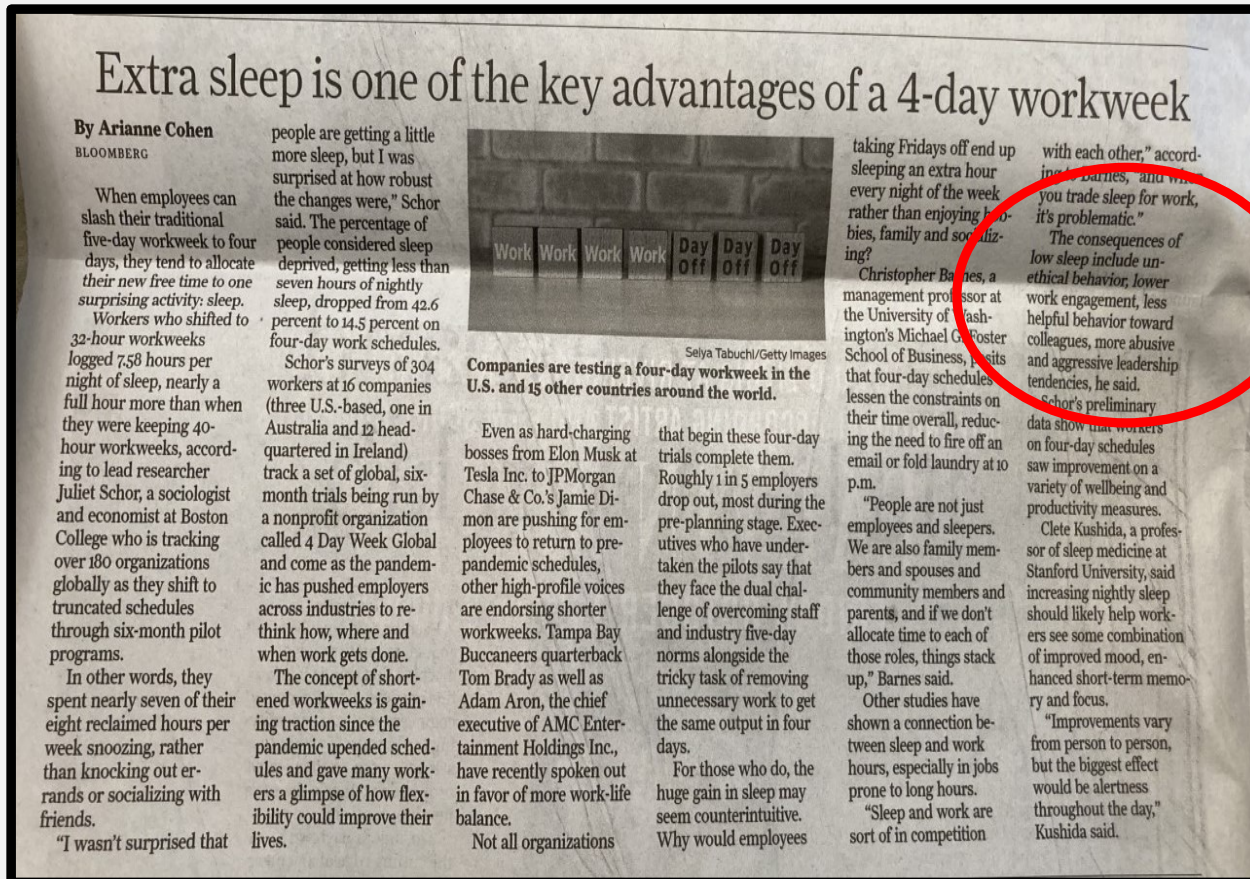
Code of Ethics

Principles of
Acceptable
Engineering
Practice

Discussion and
Guidelines



Intermission



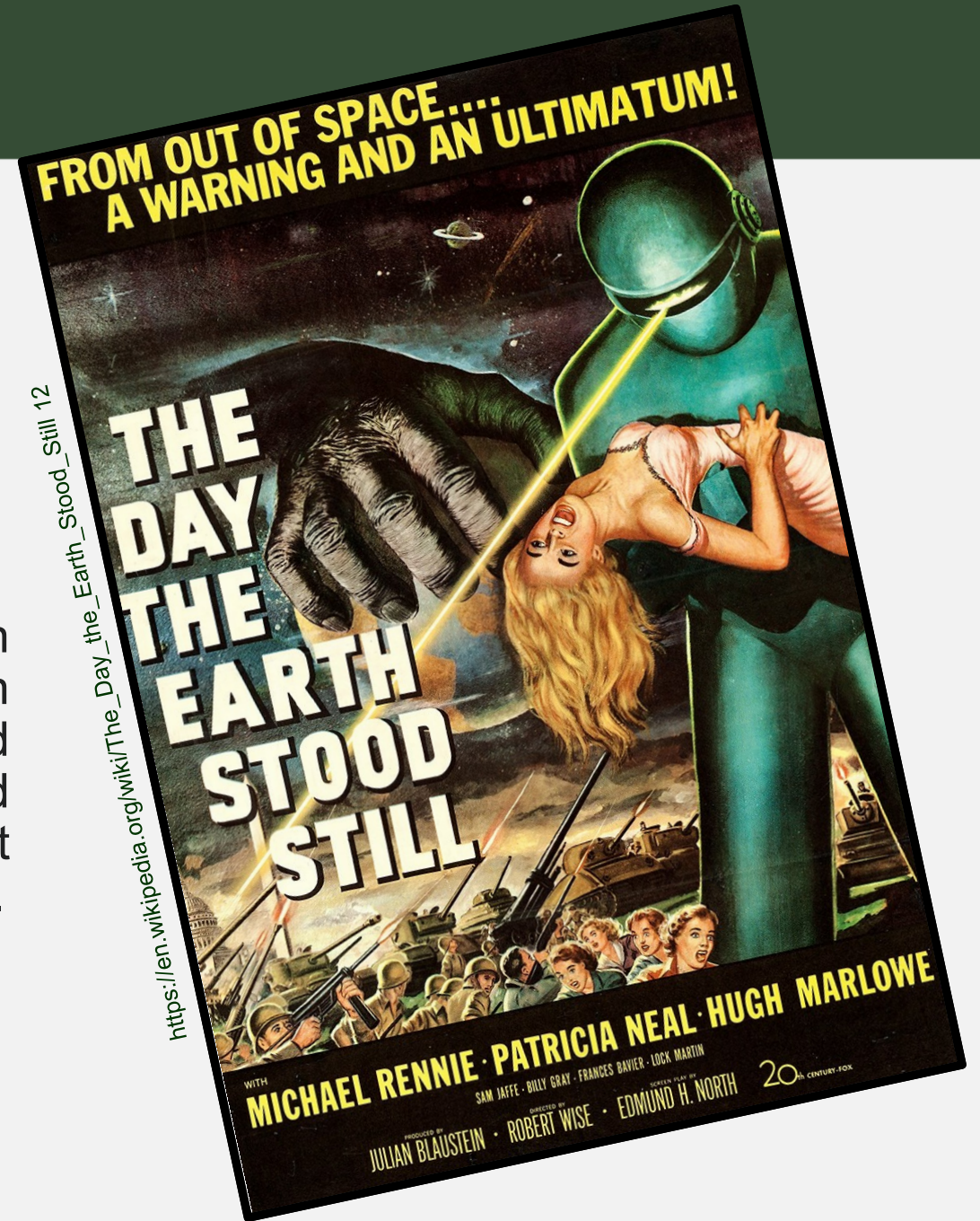
- **Unethical behavior**
- **Lower work engagement**
- **Less helpful to colleagues**
- **More aggressive and abusive leadership tendencies**

Houston Chronicle October 2, 2022

Movie Trivia

“Klattu Barada Nikto”

- A famous line from the 1951 science fiction film, *The Day the Earth Stood Still*. Set in the cold war, the storyline involves a humanoid alien visitor who comes to Earth, accompanied by a powerful robot, to deliver an important message that will affect the entire human race.





- Article VI
 - Duty to the Society
 - 1. In making application to become a member or continuing as a member in the Society, ***a member agrees to uphold the National Society of Professional Engineers (NSPE) Code of Ethics for Engineers*** and these Principles of Acceptable Evaluation Engineering Practice by precept and example.

Code of Ethics for Engineers

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.

- a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
- b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
- c. Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code.
- d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.
- e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
- f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.

- a. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
- b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which

they lack competence, nor to any plan or document not prepared under their direction and control.

- c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. Engineers shall issue public statements only in an objective and truthful manner.

- a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
- b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
- c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. Engineers shall act for each employer or client as faithful agents or trustees.

- a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
- b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
- c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
- d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
- e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of the organization serves as a member.

5. Engineers shall avoid deceptive acts.

- a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident

to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or past accomplishments.

- b. Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

III. Professional Obligations

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.

- a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
- b. Engineers shall advise their clients or employers when they believe a project will not be successful.
- c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.
- d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
- e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
- f. Engineers shall treat all persons with dignity, respect, fairness, and without discrimination.

2. Engineers shall at all times strive to serve the public interest.

- a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
- b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from the project.
- c. Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.
- d. Engineers are encouraged to adhere to the principles of sustainable development¹ in order to protect the environment for future generations.
- e. Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminars.

supplies, laboratory, or office facilities of an employer to carry on outside private practice.



NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Champion | Guide | Advance | Unite

7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.

- a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
- b. Engineers in governmental, industrial, or educational employment are entitled to review and evaluate the work of other engineers when so required by their employment duties.
- c. Engineers in sales or industrial employment are entitled to make engineering comparisons of represented products with products of other suppliers.

8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.

- a. Engineers shall conform with state registration laws in the practice of engineering.
- b. Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

- a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.
- b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.
- c. Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.
- d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. The employer should indemnify the engineer for use of the information for any purpose other than the regular purpose.

Footnote 1 "Sustainable development" is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development.

"By order of the United States District Court for the District of Columbia, former Section 11(c) of the NSPE Code of Ethics prohibiting competitive bidding, and all policy statements, opinions, rulings or other guidelines interpreting its scope, have been rescinded as unlawfully interfering with the legal right of engineers, protected under the antitrust laws, to provide price information to prospective clients; accordingly, nothing contained in the NSPE Code of Ethics, policy statements, opinions, rulings or other guidelines prohibits the submission of price quotations or competitive bids for engineering services at any time or in any amount."

Statement by NSPE Executive Committee

In order to correct misunderstandings which have been indicated in some instances since the issuance of the Supreme Court decision and the entry of the Final Judgment, it is noted that in its decision of April 25, 1978, the Supreme Court of the United States declared: "The Sherman Act does not require competitive bidding."

It is further noted that as made clear in the Supreme Court decision:

1. Engineers and firms may individually refuse to bid for engineering services.
2. Clients are not required to seek bids for engineering services.
3. Federal, state, and local laws governing procedures to procure engineering services are not affected, and remain in full force and effect.
4. State societies and local chapters are free to actively and aggressively seek legislation for professional selection and negotiation procedures by public agencies.
5. State registration board rules of professional conduct, including rules prohibiting competitive bidding for engineering services, are not affected and remain in full force and effect. State registration boards with authority to adopt rules of professional conduct may adopt rules governing procedures to obtain engineering services.
6. As noted by the Supreme Court, "nothing in the judgment prevents NSPE and its members from attempting to influence governmental action . . ."

Note: In regard to the question of application of the Code to corporations vis-a-vis real persons, business form or type should not negate nor influence conformance of individuals to the Code. The Code deals with professional services, which services must be performed by real persons. Real persons in turn establish and implement policies within business structures. The Code is clearly written to apply to the Engineer, and it is incumbent on members of NSPE to endeavor to live up to its provisions. This applies to all pertinent sections of the Code.

Sustainable Development

Footnote 1

“Sustainable development” is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management ***while conserving and protecting environmental quality and the natural resource base essential for future development.***

Response as professionals?



- **Bias**
- **False claims**
- **Sensationalism**
- **Pseudo-science**
- **Erroneous observations**
- **Unfounded conclusions**
- **Deficient engineering practices**
- **Unsafe or harmful situations**

How do you discuss...

- Are fossil fuels **bad**?
- Is fracking **dangerous**?
- What is the industry's **carbon impact**?
- Did **climate change** magnify Beryl?
- What are you doing **to help**?

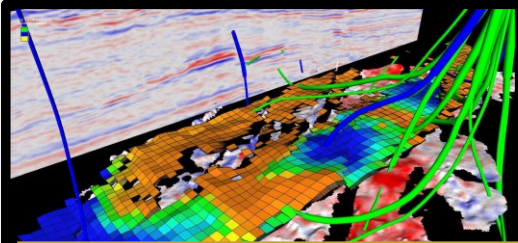
Complexity

Stakeholders

Government

Profession

<https://www.dgi.com/enhancing-reservoir-simulation/>



https://www.noozhawk.com/article/state_holds_santa_maria_meeting_on_rules_for_oil_and_gas_industry



<https://www.vlsn4.va.gov/town-hall-meetings.asp>

More interests at stake mean more ethical complexity



Images from branex <https://www.practicaladultinsights.com/what-does-a-petroleum-engineer-do.htm>

Employer



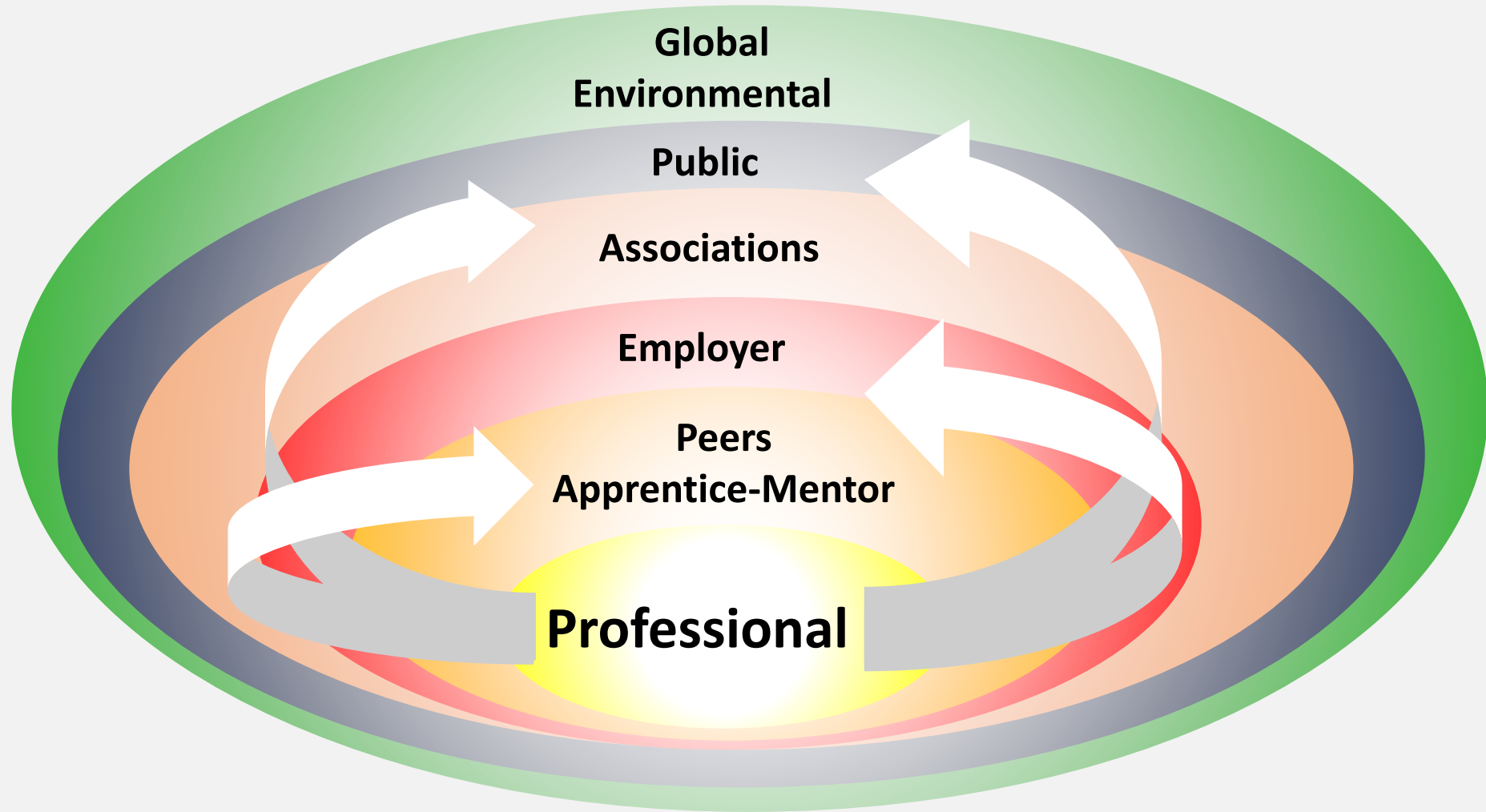
<https://www.theblock.co/learn/284453/what-is-the-us-securities-and-exchange-commission-sec>

Regulatory Agencies



Public

Spheres of Influence



Statement – A&M



TEXAS A&M
UNIVERSITY



TEXAS A&M UNIVERSITY
Atmospheric Sciences

Departments ↓

Programs ↓

ABOUT

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RESEARCH

RESOURCES

DIRECTORY

FACULTY STATEMENT ON CLIMATE CHANGE

The faculty of the Department of Atmospheric Sciences of Texas A&M University has extensive knowledge about the Earth's climate. As employees of a state university, it is our responsibility to offer our expertise on scientific issues that are important to the citizens of Texas, including whether and why the climate is changing.

We agree with the following conclusions based on current evidence:

1. *The Earth's climate is warming, meaning that the temperatures of the lower atmosphere and ocean have been increasing over many decades. Average global surface air temperatures warmed by about 2°F between 1880 and 2022.*
2. *Our best estimate is that humans are responsible for most or all of this warming. Natural factors, such as solar variability, unforced variability, or volcanic activity, have likely had little cumulative effect over this period.*
3. *On our current trajectory, the increase in global average temperature this century will exceed the Paris Agreement's goal of staying well below 3.6°F.*

Continued increases of atmospheric and oceanic temperatures present the risk of serious challenges to human society and ecosystems. It is difficult to quantify such challenges, except to say that the potential magnitudes of impacts increase rapidly as the magnitude of global warming increases.

This statement was unanimously adopted by the faculty in February 2023. It is in effect until next IPCC report or until revised.

<https://artsci.tamu.edu/atmos-science/about/faculty-statement-on-climate-change>

Statement – UT Austin



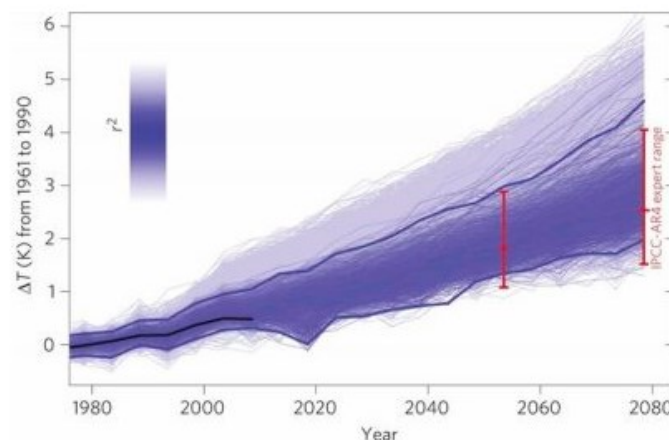
The University of Texas at Austin
Environmental Science Institute

Climate at ESI



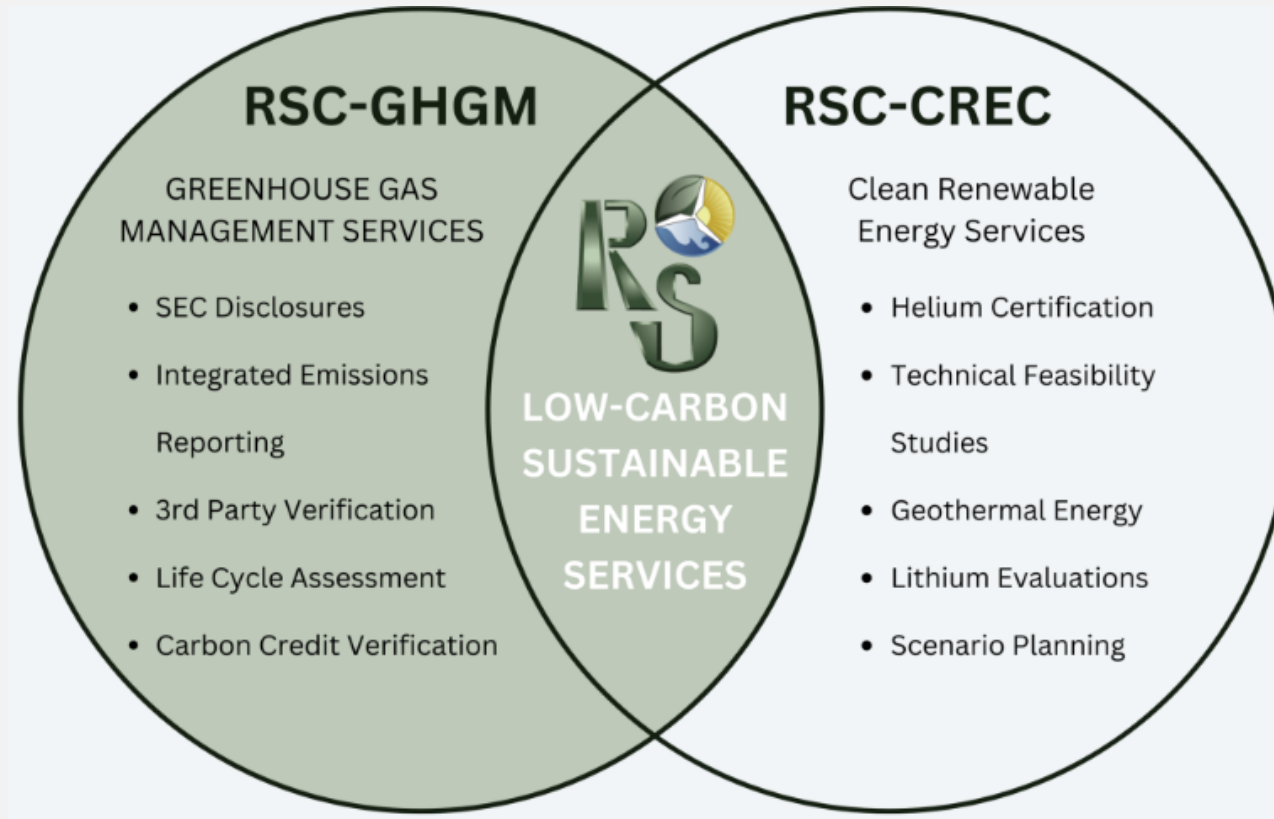
Climate change is on the forefront of everyone's minds, and at UT-Austin, ESI is pushing to promote the understanding of climate change through innovative research, outreach, and coursework.

Faster Global Warming?



A study of multi-model climate simulations published in *Nature Geoscience* suggests the possibility of stronger warming than originally anticipated. Global average temperature could be between 1.4°C and 3°C warmer in 2050 than it was just a couple of decades ago. That's substantially higher than estimates produced by other analyses, suggesting that Earth's climate could warm much more quickly than previously thought.

RS - Sustainable Energy Consulting



- Storage estimation and classification (SRMS)
- Due diligence evaluation
- Risk assessment and red flags identification
- Class VI permit application support
- Geological Evaluation and static modeling
- Reservoir simulation
- CO₂ EOR carbon storage verification
- MMV/MRV (Monitoring, Reporting and Verification)
- Integrated facilities planning
- Life Cycle Assessment (LCA)
- Assessment of economic models and CCUS costs
- Economic benefit analysis/scenario planning
- Helium project reviews and certification
- Geothermal energy
- Lithium/Critical mineral brine
- Economic benefit analysis/scenario planning
- Technology feasibility studies

How to have a productive discussion

Engagement

Take a deep breath

Listen

Observe body language / tone

Ask questions / summarize

Problem Framing

Find common ground & concerns

Concretize (sketch, take keyword notes)

Be patient, be curious, don't judge

Identify gaps in knowledge

Teaching and Learning

Share your knowledge

Outline the scale / components

Give positive examples

Wrap up / Conclude

Energy Education

- **Energy is vital for human flourishing**
- **Energy is not evenly distributed**
- **No Energy is Renewable**
- **All forms of Energy have pros and cons**
- **Energy security, which drives every global leader, requires optionality**

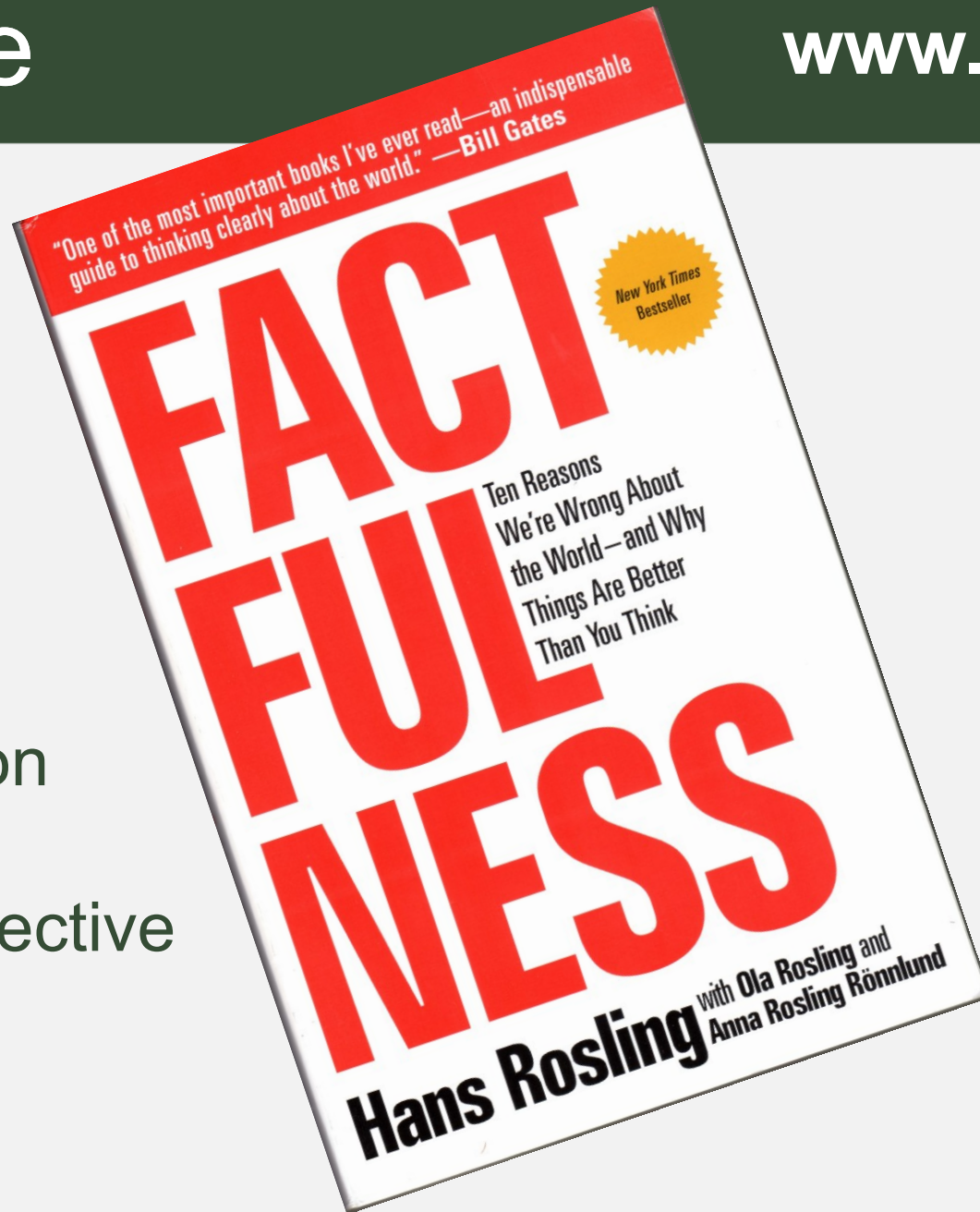


Human Scale

www.gapminder.org


Instincts

The Gap
The Negativity
The Straight Line
The Fear
The Size
The Generalization
The Destiny
The Single Perspective
The Blame
The Urgency




Worldview data


www.gapminder.org

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You are probably wrong about




Domestic work




Global warming




Plastic in oceans



Life satisfaction



Global collaborations




























Extreme poverty

We have tested thousands of people and they were systematically wrong about all this.

[Upgrade your worldview](#)

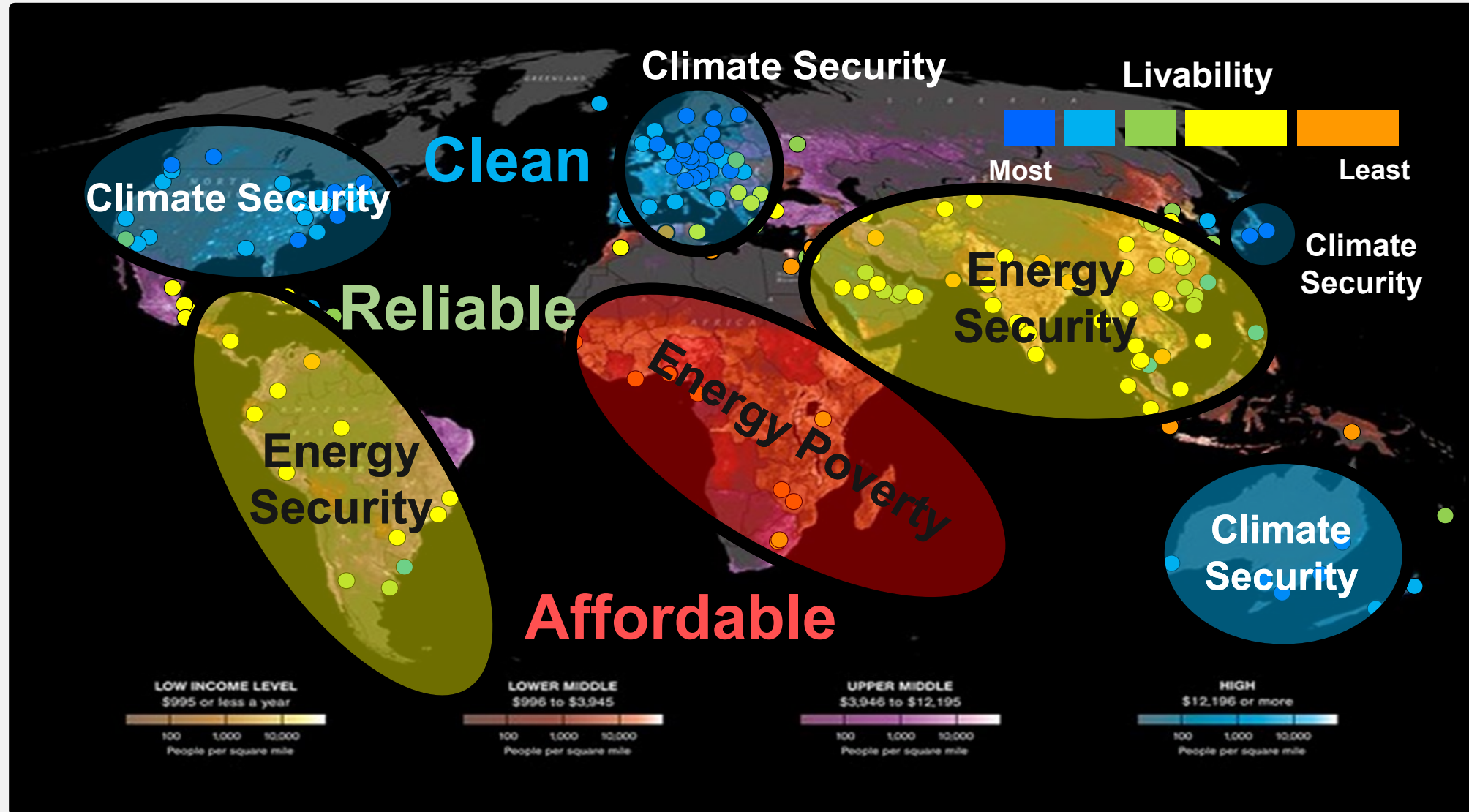
Gapminder is an independent educational non-profit fighting global misconceptions.

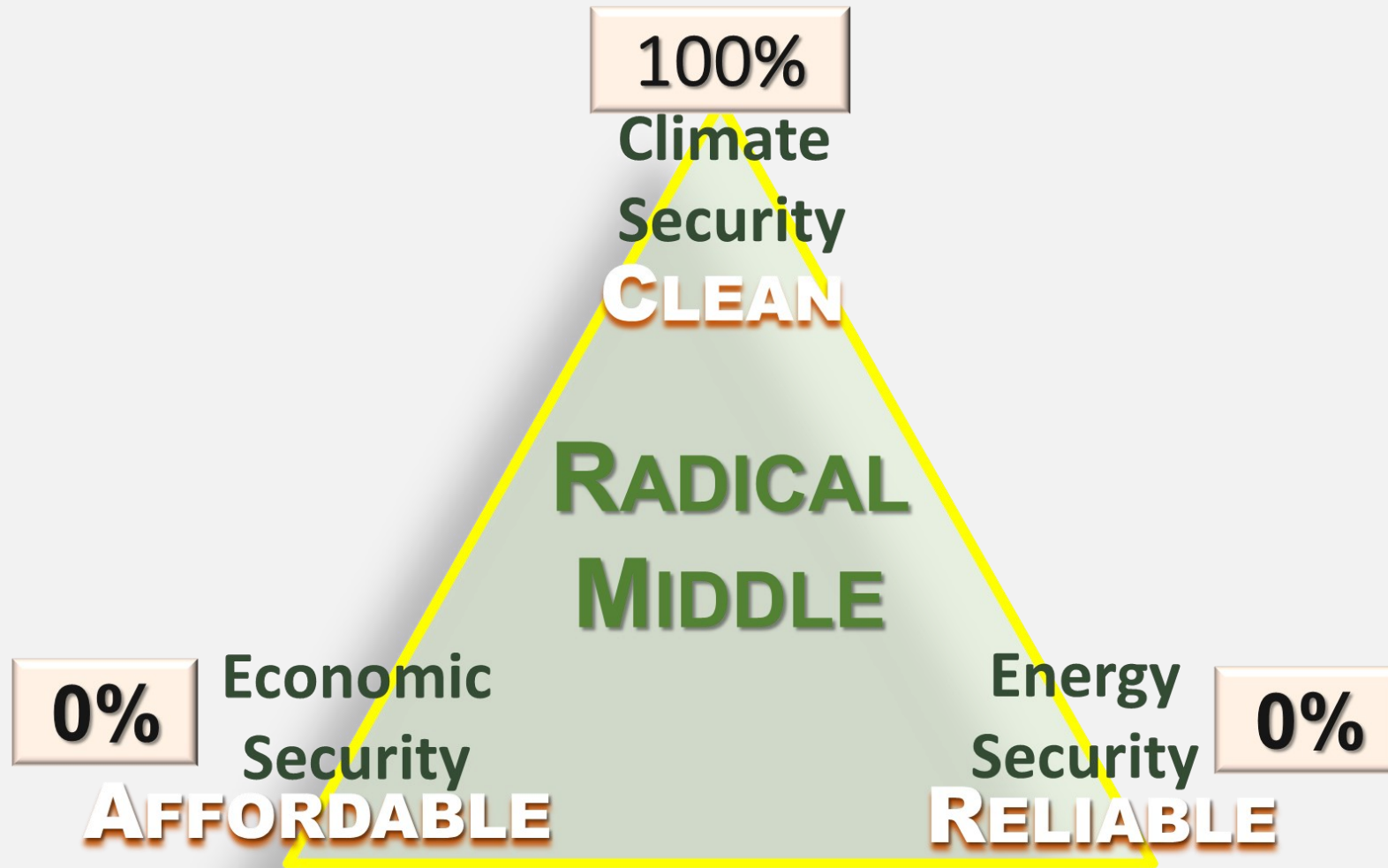
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Energy Requirements

www.switchon.org









20m 44s

An Honest & Sensible Conversation about Global Energy

In the real world, we have to make real trade-offs between climate security, energy poverty, and energy security. Energy is...


Lectures & Discussions



01h 09m 21s

Exploring the Future of Energy and Sustainability through Civil Dialog and Critical Thinking

Dr. Scott Tinker moderates a panel discussion at the 2023 Enverus Evolve Conference. Panelists include Chris Wright, CEO and chairman...



Keynote Luncheon Address: Energy Transition and the Dual Challenge of Balancing Global Energy Access with Environmental Protection

Scott Tinker, Director, Bureau of Economic Geology, University of Texas; Chairman, Switch Energy Alliance; CEO, Tinker Energy Associates, LLC

Garfield County

COLORADO MESA UNIVERSITY

<http://www.coloradomesa.edu/energy/symposium>

01h 11m 26s

Energy Transition & Dual Challenge of Global Energy Access with Environmental Protection

Colorado Mesa University and Garfield County present the Energy & Environment Symposium: Oil and Gas Education for Local Government. ...




Energy Concept Videos & Slides




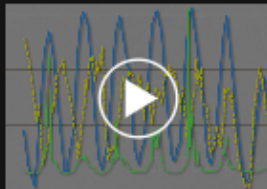
The Three Es

Energy, the environment, and the economy are linked. The overlap, called the radical middle, requires critical thinking.

 Video  PowerPoint

 7 Slides


 04m 20s




Demand Curve

Energy demand varies daily. Balancing supply with demand is not trivial.

 Video  PowerPoint

 5 Slides


 05m 43s




Energy and Economic Poverty

Energy poverty is closely tied to economic poverty. Energy poverty impacts us all.

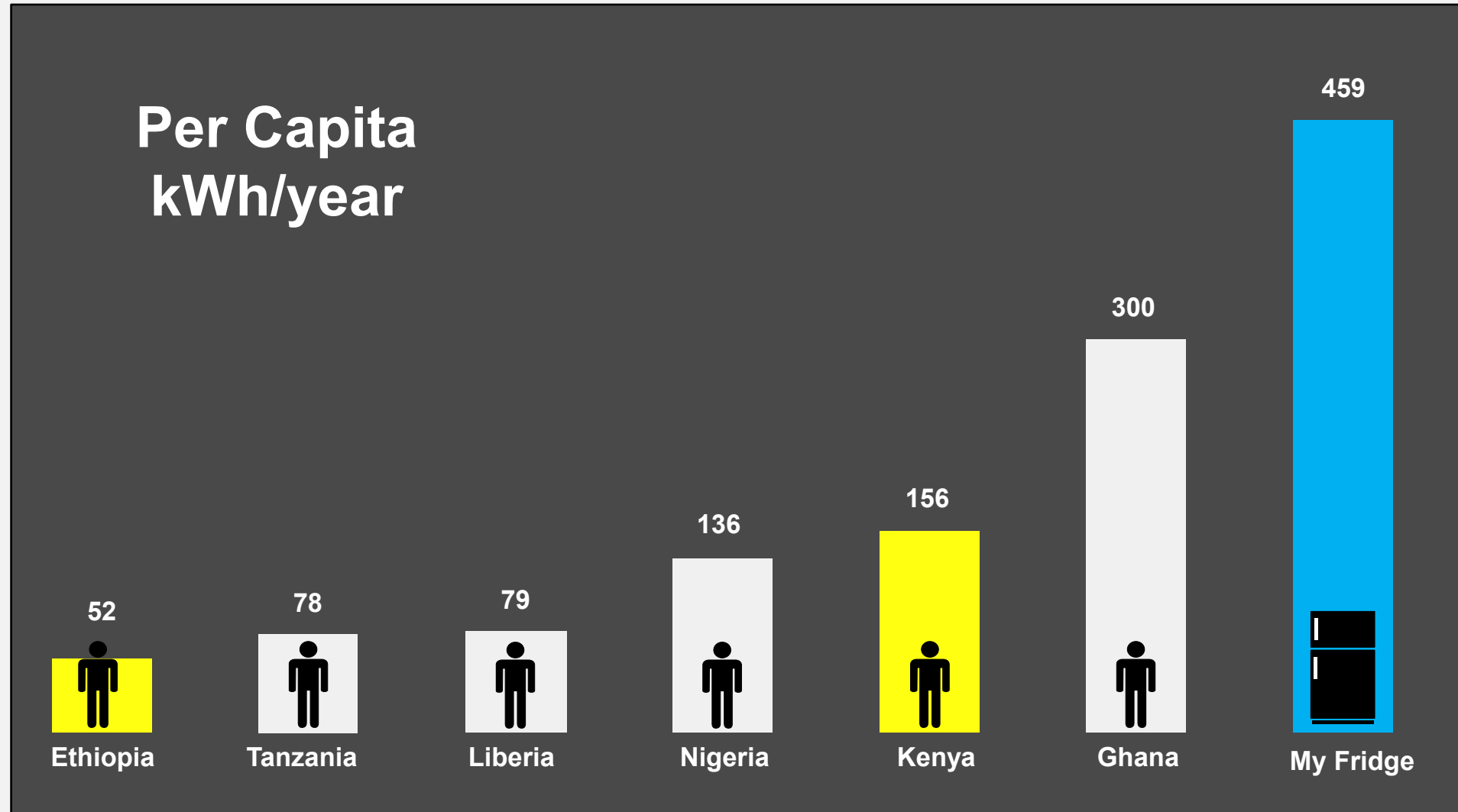
 Video  PowerPoint

 11 Slides

 07m 55s

Annual Consumption

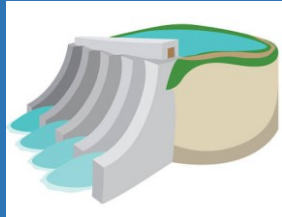
www.switchon.org



From Scott Tinker 2023, Switch Energy Alliance (Data source IEA 2010)

'Renewable' energy

www.switchon.org



No form of energy is "renewable"

Grow, Mine

Manufacture

Refine

Transport, Transmit

Combust, Landfill Disposal

Waste disposal



Discarded wind turbine blades fill thirty acres on the west side of Sweetwater.

Eli Rosen/Yucca Films



Google – ‘Rejected Energy’

Rejected energy is wasted primary energy, or energy which serves no useful purpose in our society or economy. Virtually all of the rejected energy is waste heat from burning fossil fuels. **A tiny fraction is transmission losses for electricity.**

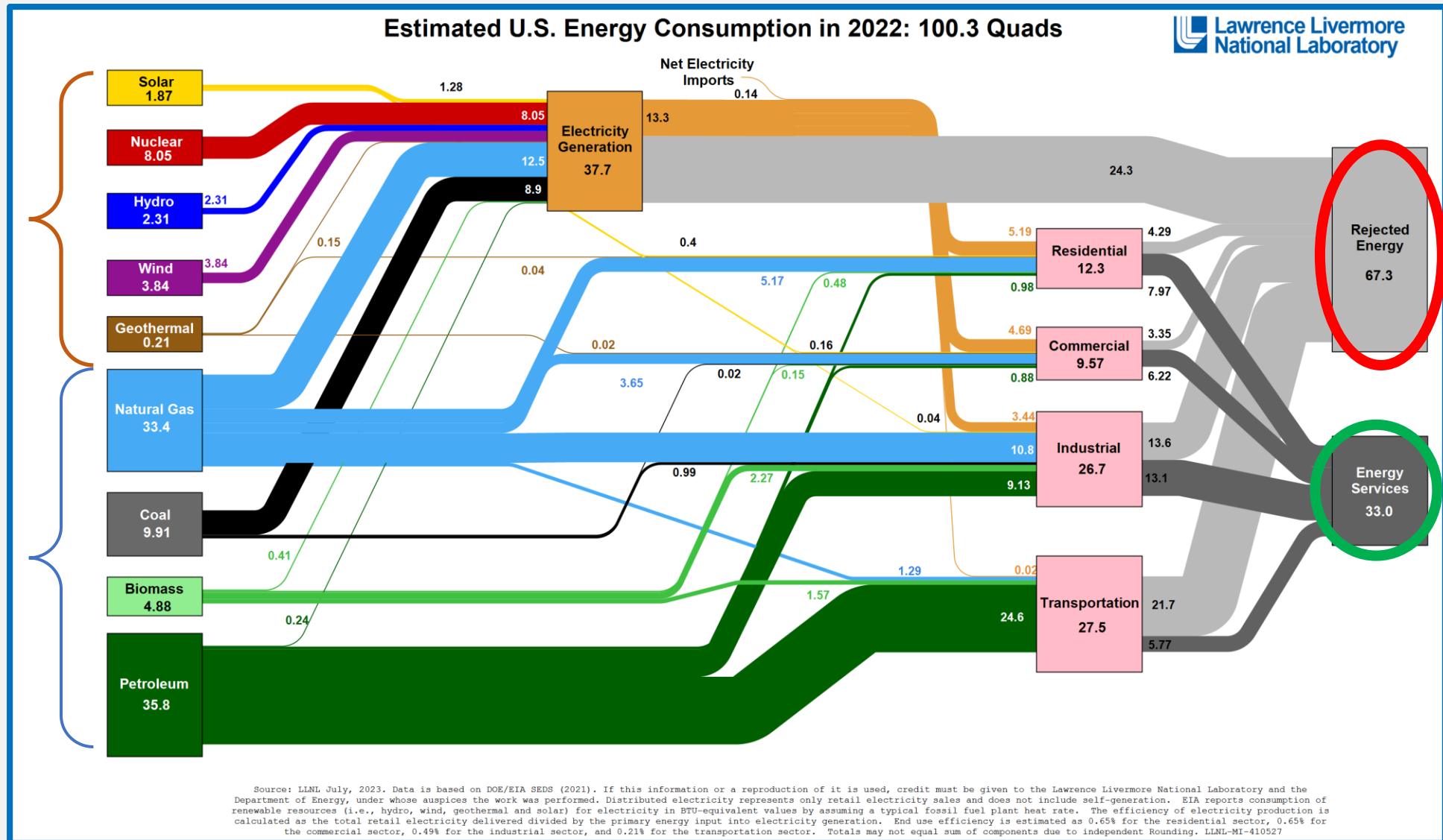
Jan 4, 2023

<https://cleantechnica.com/2023/01/04/InIs-energy-flow-diagrams-show-that-the-us-isnt-moving-the-needle-on-climate-action/>

U.S. Energy in 2022

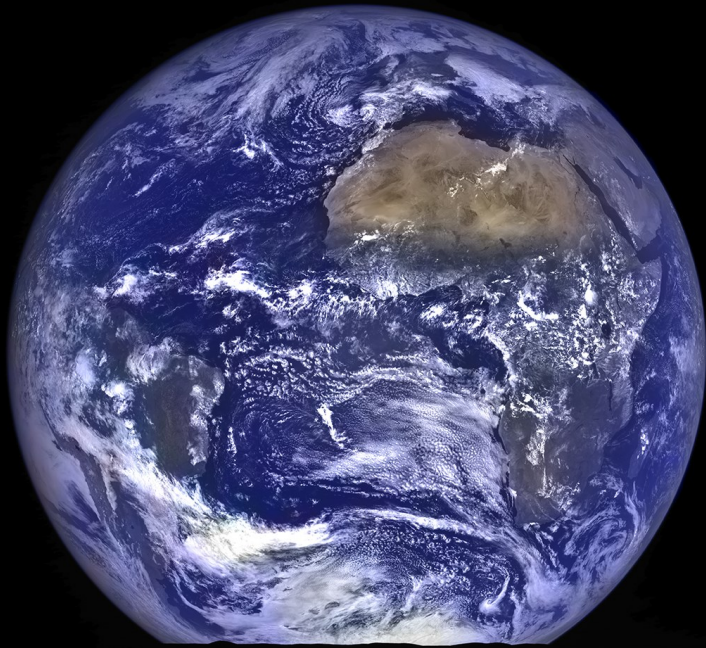
flowcharts.llnl.gov

Molecules
Electrons



Summary





We too, are of this Earth.