

PATENT CARBON ROYALTY

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WHAT IS A *PATENT CARBON ROYALTY*?

- A *patent carbon royalty* is like any other patent license royalty, except for how it is calculated.
 - Standard patent license royalties:
 - Single lump sum, or periodic amount
 - Fixed amount per unit of patented product sold
 - % of sales revenue from patented product
 - Patent carbon royalty: fixed amount *per product's lifecycle carbon footprint*

A CALL TO ACTION

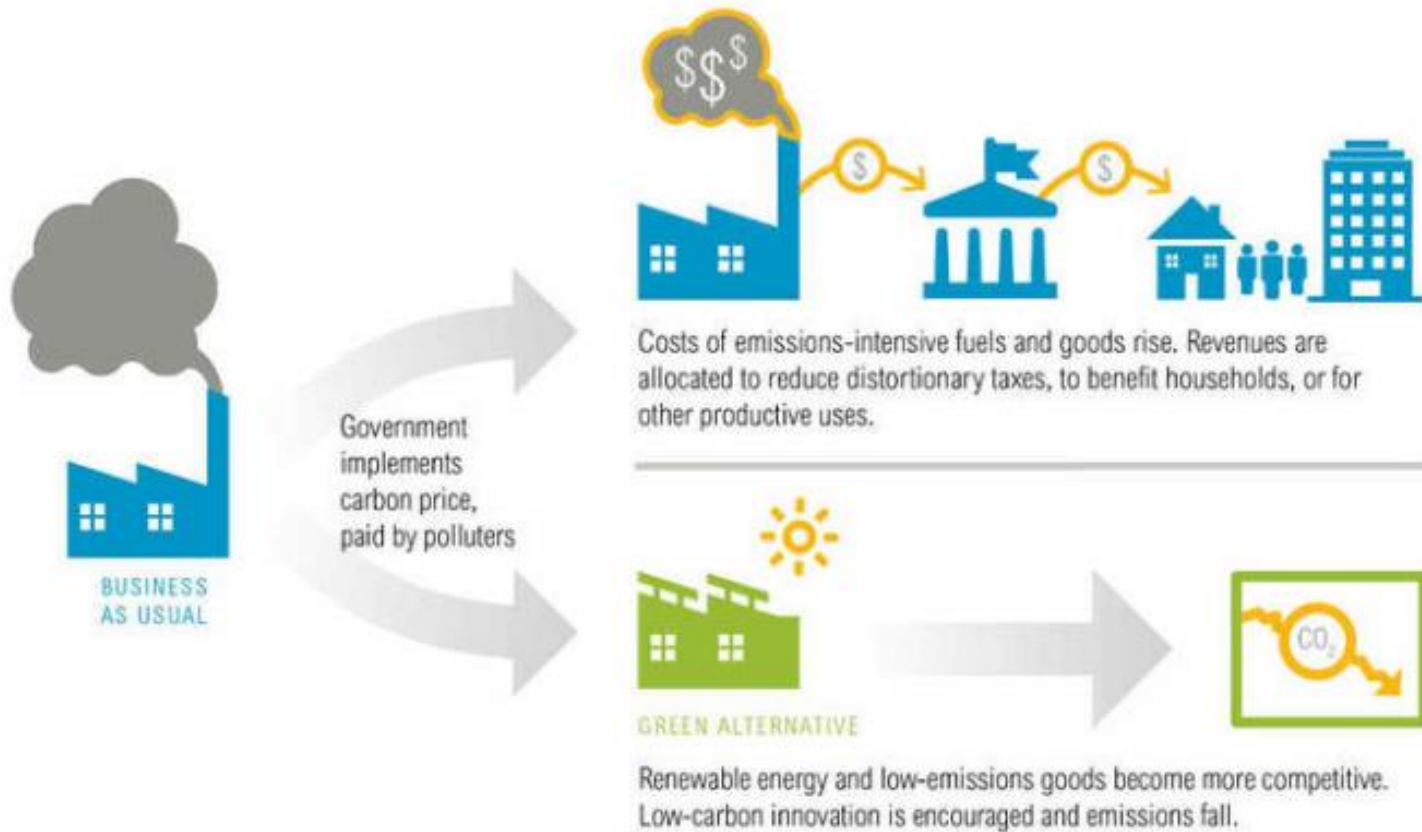
- We have contributed to the climate crisis.
- We have specialized knowledge that can help solve it.

SOLUTION: PRICE CARBON

- Putting a price on carbon will lower GHG emissions.
- Even large oil companies (ExxonMobil, Chevron, Shell, BP, etc.) say they want a price on carbon.

<https://www.documentcloud.org/documents/6153327-Oil-Gas-Press-Release-14-06-2019-finalFINAL.html>

GOVERNMENT PUTS PRICE ON CARBON



GOVERNMENT PUTS PRICE ON CARBON

- But, politics interferes.
 - “In 2012, Australia’s Labor Government rolled out a cap-and-trade program that essentially set a price on carbon of \$23 per ton. Emissions fell nationwide under the program, but the policy faced a fierce political backlash from industry groups and voters. When the more conservative Liberal Party swept into power in 2013, it quickly repealed the program.”

<https://www.nytimes.com/interactive/2019/04/02/climate/pricing-carbon-emissions.html>

SOLUTION: PRICE CARBON WITHOUT GOVERNMENT

- So, we need a way to put a price on carbon that does not depend on a new treaty, law, or regulation, or the outcome of the next election.

SOLUTION: PRICE CARBON ... USING PATENTS

- Patents can be the **legal framework** on which to build **mostly voluntary** agreements to put a price on carbon.

No Need for New Treaty, Statute or Regulation



Several Advantages for Businesses Already Willing to Pay a Price on Carbon

- **predictable** structure and costs that will not change with next election
- applies **uniformly** worldwide
- **reasonable**: corporate Boards rarely challenged for paying a patent royalty

**PATENT
SYSTEMS'
BENEFITS**

BACKGROUND: U.S. UTILITY PATENT

- Grants right to exclude others, not a right to practice.
- Patent's owner has standing to sue infringers.
- Infringement includes making, using, selling, offering for sale, or importing patented product, composition or method.
- Also includes exporting, importing, selling or offering to sell certain components of patented invention.
- Patent owner entitled to damages (lost profits and/or "reasonable royalty") and perhaps injunction.
- Intent is not an element of "direct" infringement.

BACKGROUND: CERTIFICATION MARK

- “The term “certification mark” means any word, name, symbol, or device, or any combination thereof—
- **used by a person other than its owner, ...**
- to certify regional or other origin, material, mode of manufacture, quality, accuracy, **or other characteristics of such person’s goods or services** or that the work or labor on the goods or services was performed by members of a union or other organization.” 15 U.S.C. § 1127.



BACKGROUND: CO2 EQUIVALENTS

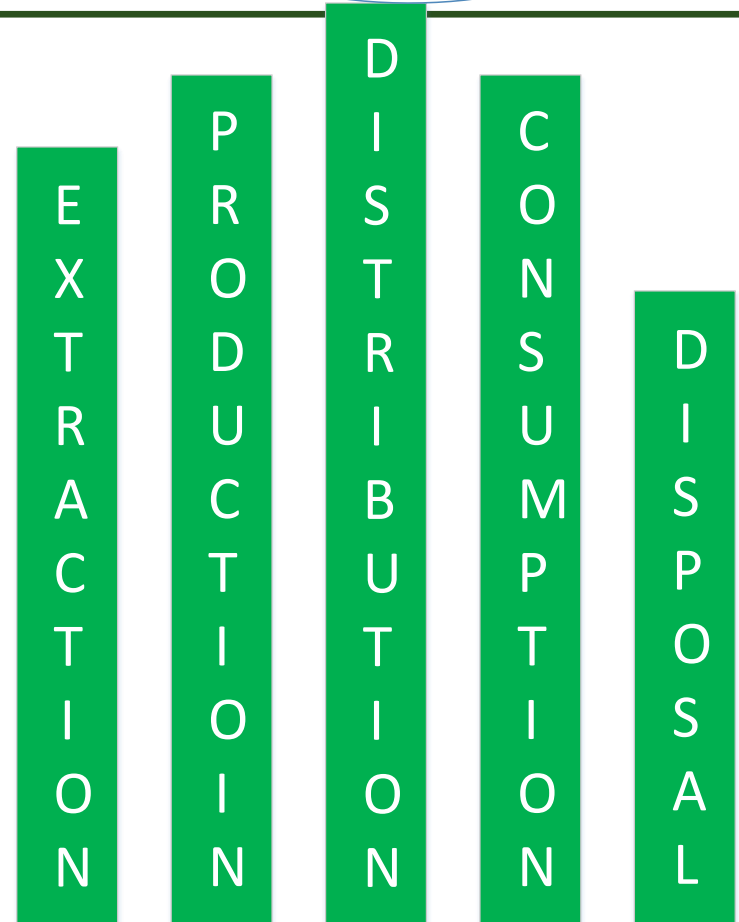
- Carbon dioxide equivalents = CO₂e
 - Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur hexafluoride (SF₆).

BACKGROUND: CARBON FOOTPRINT



- “Product carbon footprint” certification organizations exist to determine **lifecycle** CO₂e emissions over a product’s lifecycle.

- [Carbon Trust](#) (UK)
- [TUV SUD](#) (Germany, China)
- [SCS Global Services](#) (U.S.)



“OIL AND GAS MAY BE A FAR BIGGER CLIMATE THREAT THAN WE KNEW”

[New York Times](#) (Feb. 19, 2020)

- **“Oil and gas production may be responsible for a far larger share of the soaring levels of methane, a powerful greenhouse gas, in the earth’s atmosphere than previously thought, new research has found. The findings, published in the journal Nature, add urgency to efforts to rein in methane emissions from the fossil fuel industry, which routinely leaks or intentionally releases the gas into air.”**

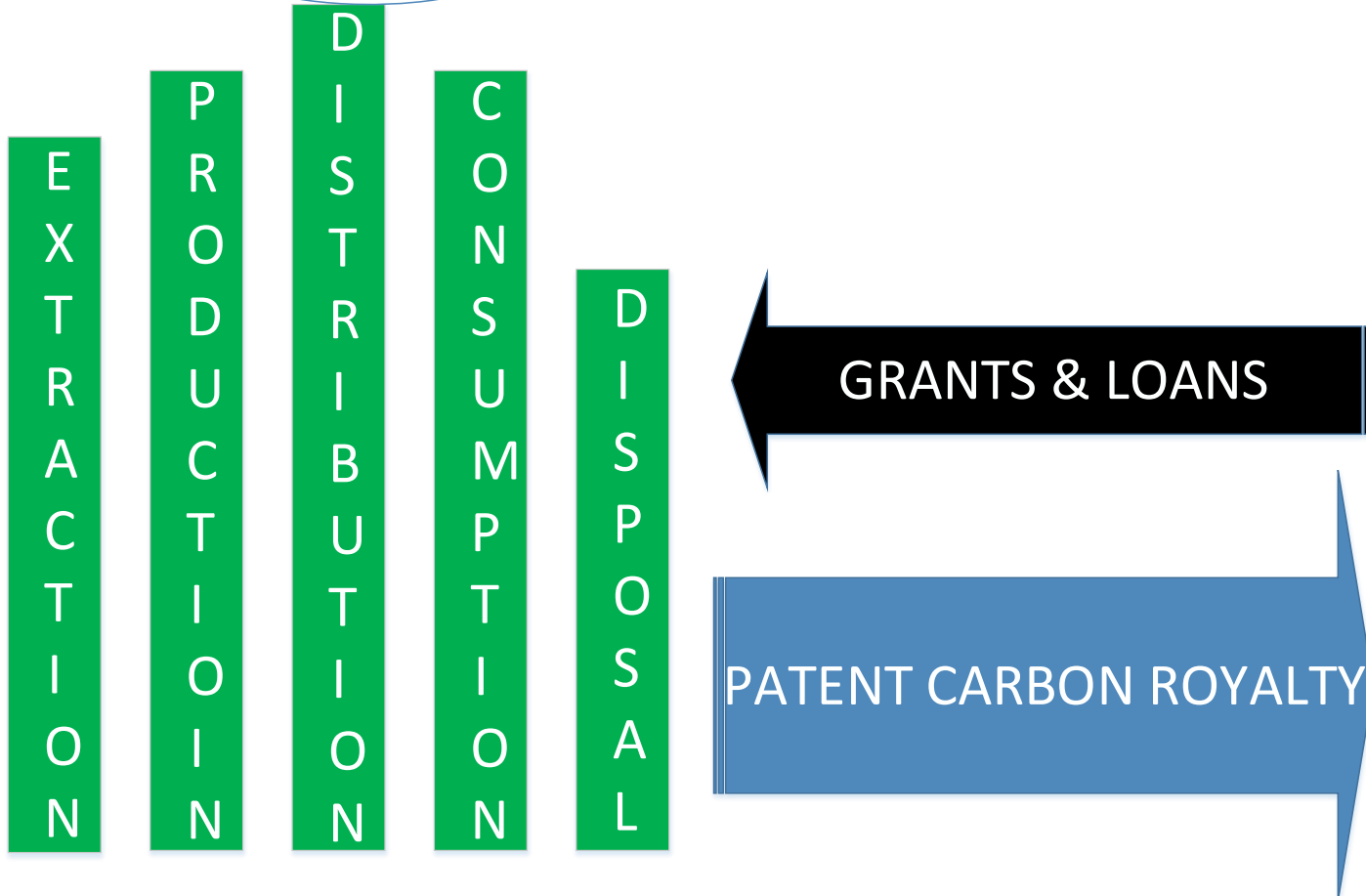
A PATENT CARBON ROYALTY: SUMMARY

- Establish a patent carbon royalty:
 - tied to lifecycle CO₂e emissions of a product or service,
 - via patent licensing and enforcement, and certification-mark standards, in multiple industries and multiple countries,
 - with setoffs for *at least* (a) other carbon-based payments by licensee, and (b) carbon royalty payments by others for lifecycle CO₂e emissions of same product or service.

A PATENT CARBON ROYALTY: DETAILS

- Establish a full lifecycle carbon royalty of \$X/metric ton of certified net CO₂e emissions (frequently updated), above a certain acceptable threshold level, attributed to lifecycle of product or service whose use, manufacture, import, export, or sale may infringe a patent.
- Each licensee pays a % of the full lifecycle carbon royalty.
 - % decreases as other licensees in lifecycle pay their share of the full lifecycle patent carbon royalty.
- License terms are standard, public, and enforced by certification mark.

A PATENT CARBON ROYALTY: SUMMARY



EXAMPLE: COAL PLANT

- Royalty based on lifecycle CO₂e emissions, from (1) the plant burning the coal, (2) generation of any externally generated electricity used by the plant, and (3) mining and transporting the coal to the plant.
- Virtual or actual pool of patents on, e.g.:
 - software for managing operation of plant
 - coal-handling electrical and mechanical systems
 - electrical grid security systems
 - pulverized coal and other new coal burning technologies
 - new flue gas emissions controls technologies

EXAMPLE: COAL PLANT

- Technologies already exist for coal plants to dramatically reduce their GHG emissions, but they are not used absent sufficient financial incentives to do so.

“Carbon capture, use, and storage technologies can capture more than 90 percent of carbon dioxide (CO₂) emissions from power plants and industrial facilities.”

<https://www.c2es.org/content/carbon-capture/>



CENTER FOR CLIMATE
AND ENERGY SOLUTIONS

OTHER EXAMPLES

- Data centers
- Automobile manufacturers
- Fracking and horizontal drilling operations
- LPNG facilities
- Chemical plants
- Concrete manufacturers
- Commercial buildings
- Cattle feedlots

INTENDED EFFECTS

- As lifecycle CO₂e emissions are reduced, royalty payments are reduced.
- Creates competitive price advantage to licensed products (electric cars) responsible for fewer CO₂e emissions relative to licensed competitors (diesel cars).
- Because each entity's carbon royalty payments decrease as CO₂e attributed to **lifecycle** of product or service is decreased, each entity has incentive to pressure others in lifecycle to decrease their CO₂e emissions.

INTENDED EFFECTS

- Licensees can market their compliance via a certification mark.
 - certification mark helps licensees compete against competitors who do not yet pay a patent carbon royalty.
- Massive fund available to licensees to finance projects to reduce GHG emissions and increase GHG capture.

PATENT SYSTEMS' BENEFITS

- avoids hurdles faced in many environmental lawsuits
 - standing
 - absence of clear statutory or Constitutional basis for private cause of action

PATENT SYSTEMS' BENEFITS

- robust and flexible
 - private property rights typically prized and protected
 - no doctrine against using private property rights to advance public good
 - injunction risk justifies companies paying royalties even if infringement uncertain
 - injunction risk higher where, as here, injunction would advance the public interest, under *eBay*
 - licensing parties given wide latitude in structuring a patent license

BUT IS CARBON FOOTPRINT TOO FAR REMOVED FROM PATENTED INVENTION?

- Patent royalties are payment for right to use the patented invention.
- But a patent carbon royalty is based on a product's carbon footprint.
- Is that too great a gap for this idea to work?

BRIDGING GAP
BETWEEN
EXTENT OF
USE OF
CLAIMED
INVENTION
VS.
LIFECYCLE
CO2E
EMISSIONS

- Already established practice to cap annual patent royalties at a level independent of the extent of use of the invention.
- Set royalty at (high) $\$X/\text{day of}$ infringement (or other infringement-based amount) but with (lower) **annual cap** set at patent carbon royalty.

BRIDGING GAP
BETWEEN
EXTENT OF
USE OF
CLAIMED
INVENTION
VS.
LIFECYCLE
CO2E
EMISSIONS

- **Patent pools may** give licensing parties more leeway in specifying a royalty base disassociated from actual infringements.

BRIDGING GAP
BETWEEN
EXTENT OF
USE OF
CLAIMED
INVENTION
VS.
LIFECYCLE
CO₂E
EMISSIONS

- The extent of **lifecycle CO₂e** sometimes is roughly proportional to the extent of **lifecycle infringement**. E.g., the patent might be on flue gas desulphurization equipment in a coal plant, or pumping equipment for a gas pipeline, or mechanical and electrical systems used in shale-oil production, etc.

BRIDGING GAP
BETWEEN
EXTENT OF
USE OF
CLAIMED
INVENTION
VS.
LIFECYCLE
CO2E
EMISSIONS

- Patent license royalty may roughly reflect extent of **lifecycle direct and indirect infringements authorized** via patent exhaustion, implied licenses and express licenses to suppliers and customers.

BRIDGING GAP
BETWEEN
EXTENT OF
USE OF
CLAIMED
INVENTION
VS.
LIFECYCLE
CO2E
EMISSIONS

- License agreement might **covenant not to seek injunction** against downstream distributors, customers, etc. and upstream suppliers, etc., partly to justify patent carbon royalty being based on **lifecycle** CO₂e emissions.

BRIDGING GAP
BETWEEN
EXTENT OF
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CO2E
EMISSIONS

- **Certification mark** standard requiring payment of patent carbon royalty provides backstop to patent law leverage, to extent certification mark becomes important to consumers and businesses.

BRIDGING GAP
BETWEEN
EXTENT OF
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CLAIMED
INVENTION
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CO2E
EMISSIONS

- Once enough licenses are granted, “**established royalty**” doctrine may shield patent carbon royalty demand from challenge that it is too disconnected from value of patented invention.

OTHER LEGAL ISSUES

- Patent misuse and antitrust issues.
 - “patent misuse” is weak doctrine currently. *Princo Corp. v. Int’l Trade Comm’n*, 616 F.3d 1318 (Fed. Cir. 2010) (en banc).
 - certification marks provide some leeway.
 - patent pools provide some leeway.

OTHER LEGAL ISSUES

- Patent pools.
 - Not patent misuse to license right to use large pool of patents and require royalties based on sale of products even if those products do not use the licensed patents, at least where no evidence that patent owner refused to license individual patents separately. *Automatic Radio Mfg. Co. v. Hazeltine Research, Inc.*, 339 U.S. 827 (1950).

WHAT YOU CAN DO

- Recruit:
 - a billionaire
 - an oil company
 - a University
 - an NPE
 - a current patentee litigant

WHAT YOU CAN DO

- Steal the idea and make it happen.
- Share idea with clients and colleagues around the world.

WHAT YOU CAN DO

- Improve the idea.
 - antitrust
 - patent damages
 - patent licensing
 - patent pools
- Improve describing the idea.
- Discuss the idea with me.

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WHAT YOU CAN DO

- Patent Prosecutors:
 - disclose and claim (in a dependent claim) entire lifecycle of product or service.
 - include CO₂e emission step(s) in disclosure and at least one dependent claim.
 - draft claims to take advantage of section 271(g).

WHAT YOU CAN DO

- **Sec. 271(g)**: “Whoever without authority **imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented** in the United States shall be liable as an infringer, if the importation, offer to sell, sale, or use of the product occurs during the term of such process patent. A product which is made by a patented process will, for purposes of this title, not be considered to be so made after— **(1) it is materially changed by subsequent processes; or (2) it becomes a trivial and nonessential component of another product.**”

WHAT YOU CAN DO

- [Example *simplistic* claims in hydraulic fracturing patent]
 - “A stream of recovered petroleum and/or gas produced by the method of claim 1 and refined into jet fuel.”
 - “The method of claim 1 further comprising burning on site some of the recovered methane.”
 - “The method of claim 1 further comprising [disclosed processing steps to form state of product ready to burn].”

WHAT YOU CAN DO

- Think of other new ways patents can advance the public good.
 - *E.g.*, patent lawsuit seeking injunction against gun manufacturer or seller?

WHAT YOU CAN DO

*There is no law against
using private property
for the public good*

NON-CONFIDENTIAL

- This presentation is not confidential.
- The model is not proprietary.
- I have no financial interest in this.
- Please share with others.



- Objections?
- Skepticism (relative to other “solutions”)?
- Suggestions?

APPENDIX

WHERE DOES THE MONEY GO?

- Grants and low-interest loans to:
 - Patent-carbon-royalty licensees for efforts to reduce their GHG emissions.
 - Product Carbon Footprint organizations to improve and finance their audits.
- Grant/Loan recipients obligated to grant FRAND licenses to any IP developed using the grant or loan.

WHERE DOES THE MONEY GO?

- Costs of:
 - organizations needed to run program.
 - acquiring and maintaining patents.
 - licensing and litigation.
 - promoting and advertising the certification marks.
- No more than 50% of revenues distributed among patent owners, per virtual patent pool model.

NOT ADDRESSED

- Alleviating impacts of higher costs on consumers, and small businesses.

VISION FOR 2021: LEGAL INFRASTRUCTURE

- Pacific NW law school(s) create the legal infrastructure:
 - Research the law
 - Draft the agreements
 - Design and register the certification mark(s)
 - Create the non-profit legal entity(ies)
 - Write grant applications to fund effort

VISION FOR 2021: EARLY ADOPTERS

- Prominent companies in key industries sign pledge to participate as licensees once program starts.
- Prominent Universities and large patent holders pledge to contribute patents to the patent pools.

VISION FOR 2021: ORGANIZATIONAL INFRASTRUCTURE

- Sign up existing organizations to participate.
 - **Patent-pool organizations** to amass, and manage actual or virtual patent pools to minimize royalty stacking and fairly distribute royalties.
 - **CO2e Certification organizations** to frequently audit and certify CO2e emissions attributed to each link in chain of lifecycle of a particular product or service, and audit upstream and downstream carbon-based fees or royalties being paid.
 - **Certification-mark organizations** to police use of mark.

CLEARINGHOUSE MODEL EXAMPLE

