

Clean Tax Cuts: A Year of Policy Design

Basic Concepts, Definition and Theory

New Debt & Equity CTC Mechanisms

Next Steps in Policy Development

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New Free Market Policy Solutions for 21st Century Challenges

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***Note:** This document compiles policy proposals from many sources for purposes of discussion. Inclusion here does not imply that any of the participating organizations endorses any specific proposition as public policy.*

Grace Richardson Fund, however, does recommend that the mechanisms suggested herein be studied, impact modeled and further developed, collaboratively, as fast as possible, with the highest priority, by any organizations sincerely seeking solutions to the catastrophic and global problems caused by waste and pollution.

Executive Summary

The Clean Tax Cuts concept (CTC) first surfaced publicly a year ago, June 2016, introduced by The Grace Richardson Fund at the AREDAY summit in Aspen, CO.¹ Since then, working groups of university scholars, industry experts and policy institutes (informally the CTC working group) have developed CTC using charrette process, a collaborative, expert-level design method.

These workgroups have designed CTC mechanisms for [seven economic sectors](#) (auto, power, clean tech, real estate, farming & forestry, green bonds, oil & gas)² tailoring distinct mechanisms for the separate needs of debt vs equity capital markets.

The [tax-exempt clean-asset-based green bond mechanism](#), emerging from the Columbia-hosted charrette, offers a possible multi-trillion dollar solution, a simple, uniform, technologically neutral means of accelerating a wide variety of clean infrastructure deployment, globally.

The [auto](#) and [power sector CTC](#) proposals suggest tax cuts tied to sales of products with quantifiable impacts (low-emission vehicles, zero-emissions power). Both offer powerful, performance and metrics-based mechanism for driving these industries cleaner. Cleaner companies gain a competitive advantage, and everyone from employees to investors are motivated by higher profits on their stock packages.

Jigar Shah (SunEdison founder and co-founder of Carbon War Room and Generate Capital) [recently wrote that “CTCs could quickly expand to double or triple \[the\] pace”](#) of clean infrastructure deployment.

With input from nearly 200 prominent experts and scholars, Clean Tax Cuts now stands at a fortunate crossroads. While some have proposed new areas for exploration,³ much work remains just to model the new CTC mechanisms developed this year, for economic, fiscal and

environmental impact. The analysis of these sectors, their standards and metrics of sustainability, must in some cases be refined. Key decisions must be made. What to weed out? Where to focus? Clearly, we must now strategize next-level CTC development, and integrate CTC project proposals across multiple sectors, so that these can be easily unified into coherent economy-wide CTC legislation, suitable either for US tax reform, or an infrastructure bill. Or perhaps an international accord on tax-exempt green bonds?

One thing is clear. The last year proves that collaborative CTC development produces rapid and robust results. CTC has now grown beyond a raw concept and into a nuanced, detailed broadly collaborative effort. The above questions will be best answered not by the GRF alone, but by the members of the CTC working group together, and by a coalition of donors and thought leaders who have shown a keen interest in this new policy design work. That coalition has already taken shape, a transpartisan alliance of clean capitalists, green free-market conservatives, and leading environmental philanthropists, all eager to pioneer new ideas that can not only transform capitalism into clean capitalism, but can end the political gridlock surrounding these issues.

To that end, a new Clean Capitalist Leadership Council is now in formation, to guide the next phase of CTC development. Leaders who find these new ideas of interest, are welcome to contact GRF for information about participating in the Council.

This paper gives an overview of the CTC concept and principles, the development process so far, and the promising new CTC mechanisms that have emerged to date in 2017. Finally, it gives some hints as to what lies ahead.

¹ A video of the first public presentation of CTC can be found at this link: <https://www.youtube.com/watch?v=bKqI1SLBE7U>

² Sector reports and proposal summaries can be found at this link: cleantaxcuts.org/charrettes-by-sector/

³ For example, plastic waste, ocean decarbonization, water pollution, sustainable water supply, rainforest preservation, a possible international accord providing for global tax-exemption for green bonds.

CTC Concept & Principles

Clean Tax Cuts aim to accelerate profitable solutions to any kind of waste or pollution, by applying the supply side principle “if you want more of something, tax it less.” In particular, CTCs cut tax rates investors pay on debt and equity in clean investments – these include simple rate cuts to income, dividend, interest, capital gains and other capital taxes, specifically for investments that reduce the most costly waste and inefficiency – the root cause of all major pollution and negative externalities.

By simply reducing investment tax rates, CTCs remove barriers to capital, which simultaneously increases supply and demand for clean solutions: this one policy both increases ROI and capital investment flows, and reduces cost of capital and cost of outputs. The result? Lots more good stuff, like cheaper clean energy or other waste reducing solutions.

Described as “all carrot, no stick,” Clean Tax Cut mechanisms include only positive feedback loop rewards. Both technology and sector neutral, CTC picks metrics, not winners or losers. This approach avoids creating lopsided impacts, or political opposition arising from the perception that any one group is being punished, demonized or threatened. Every sector can be profitably transformed, and made ever cleaner, by consistently rewarding elimination of the most costly waste and inefficiency.

As a result of these design principles, it is important to recognize what CTC is NOT. CTCs avoid creating new taxes, fees, regulations, tax credits, price support subsidies, carbon trading schemes, offsets, or other such artificial market constructs, or barriers to capital of any kind.

CTCs are very different from most other tax incentives, which are generally tax credit price support subsidies, often used to support unprofitable technologies. This, and the market-constricting inefficiency of tax equity trading schemes that only the largest taxpayers and companies can use, creates economic drag. CTC’s simple tax rate cuts by contrast, allow everyone to participate far more democratically and profitably in clean solutions, without subsidizing any failing business models. That expands markets and boosts GDP.^{4 5}

All these older policies were put in place in the last three decades, when it appeared clean solutions could not be profitable without a price adjustment mechanism. But that is no longer true. Per kilowatt, wind, solar, energy efficiency now cost less than fossil fuels, unsubsidized – more so with every passing year. Many other clean solutions (HEVs, EVs, ENERGY STAR products, etc.) show profits. Price is no longer the key barrier to deployment. Given the tech drivers shaping such long term trends, these older price adjustment policies will likely grow increasingly outdated and off point with every passing year.

Barriers to capital are the key bottleneck now. Growing profitability opens up new policy options: we can eliminate those barriers by cutting taxes on capital returns, and repealing outdated laws and regulations that constrict clean capital flows. CTC offers exactly that, a natural clean capital acceleration mechanism targeting profitable clean solutions, well suited to accelerate the rise of clean capitalism, and curb environmental threats faster and more profitably.

⁴ CTC, as pure income tax rate cuts, benefit only profitable clean enterprise, and benefit the most profitable clean companies the most. That explains why CTC will both have far more beneficial growth characteristics than price support subsidies, and will also tend to accelerate the most capable clean capitalists – often the low-cost leaders – the most.

⁵ This also explains why CTC can be budget neutral or positive, taking advantage of a policy arbitrage. Tax credit price support subsidies reduce tax revenue in two ways: directly as tax credits, and by reducing GDP, when they promote unprofitable business models. CTC only reduces tax revenue one way, by the static value of the tax cut. But that is offset by GDP growth, since capital tax cuts are known to have positive growth effects, and lead to new, offsetting sources or revenue from increased investment and jobs. So a dollar for dollar substitution of CTC for tax credit price support subsidies should be GDP and budget positive, leading to a net increase over the status quo. CTC may actually produce more dynamic growth than most capital tax cuts, because the target of all CTC (the reduction of waste and inefficiency) has been shown to produce higher profits. To the extent CTC reduces environmental impacts, it will also save billions in the future in private and public losses.

Clean *Laissez-Faire*?

The main challenge, when designing transpartisan environmental policy, is finding an approach that brings conservatives and business leaders to the table. These groups often reject policy proposals as too left-wing and anti-business. So GRF believes the best chance for success starts with ideas based in historically popular conservative and pro-capitalist policies. But an even greater chance of success comes when policy ideas are also rooted in core shared principles out of which grew all modern conservative, liberal and progressive thought, underpinning all modern free-market, democratic capitalist societies. Common principles would allow for broad consensus on a new policy paradigm.

Clean Tax Cuts uniquely offers exactly that, solutions not merely rooted in 20th C. conservative, conservationist, and supply-side ideas, but consistent with the original 18th C. revolutionary conception of [laissez-faire capitalism](#) and natural rights, perhaps the earliest root concepts behind all modern conservative, liberal and progressive thought. If that appears surprising, perhaps consider that *laissez-faire* is nowadays often misunderstood, by both supporters and opponents, to mean no government control, even to the degree that businesses should be free to damage the environment, public health, and both public and private natural and property rights, without interference.

Not quite.

Laissez-faire economics, central to the classical liberal movement boldly asserting democratic and natural rights, arose in reaction to 17th C. – 19th C. neo-feudal economies. Grants of royal and aristocratic monopoly excluded most of the public from legally participating freely in their native economy. *Laissez-faire*, *laissez-passé* (an early formulation, literally “let them do, let them pass”) originally meant let the public

participate equally in commerce, as a natural right creating public benefits for all. *Laissez-faire* actually calls for an active, effective, but deft government role with three interrelated policies: (1) to protect equal participation in natural and property rights, (2) to lower artificial barriers to capital and economic participation (especially when arising from harmful privileges), and (3) to repeal bad laws and regulations that create barriers to capital and democratic participation, with little public benefit. With these core policies, the original *laissez-faire* thinkers sought to empower the public to compete to become the most efficient, publicly beneficial capitalists, to allow everyone to “*laissez-faire*” – or do – even more, for the public good.⁶

Clean Tax Cuts do precisely that. They stand apart from other environmental policies, because they simply lower barriers to clean capital. They eliminate waste by directly inducing democratic participation in clean capital acceleration. They let clean capitalists do more, for the public good.

By contrast, they do not create new artificial markets, or policy constructs, or taxes, or regulatory barriers. CTCs rather simultaneously *deconstruct* and remove barriers to clean capital caused by (a) the problem of improperly privileged, wasteful free-riders, and (b) market-constricting policy constructs born out of primitive attempts to deal with the problem of free-riders.

Really, those free-riders include not just commercial polluters, but most of us consumers, billions of us, who buy wasteful products. The “[tragedy of the commons](#)” of our day is that we billions massively damage each other’s natural and property rights by our improperly privileged incidental waste, and cannot be held legally accountable by our sheer numbers and longstanding habits, only now being fully

⁶ [El Otro Sendero](#), the work of the great Peruvian economist, [Hernando de Soto](#), who ended the reign of terror of the Shining Path with an idea, raises exactly this same *laissez-faire* analysis in the context of Peru and other similar economies. GRF suspects his property rights analysis would apply just as well to deforestation and global conservation challenges, as it does to the problems of poverty and terrorism.

recognized as massively harmful. So by our bad habits, we create both unfair competition and an unfair tax burden (i.e. barriers to capital) for clean capitalists, those entrepreneurs and investors who admirably solve, rather than cause, such costly waste problems.

Clean Tax Cuts finesse that problem. They remove all those barriers to clean capital and democratic participation in clean solutions. They protect everyone's natural and property

CTC Development Process So Far

Since June 2016, following the suggestion of Amory Lovins, Chief Scientist of the Rocky Mountain Institute, CTC has been developed primarily using charrette working groups – intensive, collaborative, expert-level working groups with a specific design focus. The process, borrowed from architecture, offers a powerful tool to solve design issues rapidly for complex projects. Each CTC charrette usually convenes between 15 - 35 scholars and experts from universities, institutes and the sector itself, for at least day-long sessions with a specific policy design goal.

After the [first charrette at Columbia University](#) last September, various university and policy institutes stepped forward to co-host a series of seven CTC design charrettes, each focussing on a specific sector or market, examining market structures, sustainability metrics and resulting opportunities for CTC mechanisms in each sector or market. Charrettes were conducted in the following order:

Green bonds. Columbia University CTC Working Group: Energy & Environment, SIPA; Sabin Center for Climate Change Law, *New York - March 6.*

Commercial real estate. The American

rights from harm – both pollution-related harm from unfair free-rider competition, and economic harm caused by both counterproductive laws, and unfair tax burdens and unfair competition (barriers to capital) imposed on clean capitalists.

CTC does exactly what classical “*laissez-faire*” policy prescribes. For maximum public benefit, simply let clean capitalists do more. Clean *laissez-faire*.^{7,8}

Council for an Energy Efficient Economy, *Washington, DC - March 23*

Power sector. American Renewable Energy Institute, *Aspen, CO - March 27*

Agriculture, forestry and other land use. The Nature Conservancy, Rodale Institute, Climate Advisers, *Washington, DC - April 3*

Clean technology. Arizona State University, LightWorks, Center for Negative Carbon Emissions - *Arizona, April 4*

Oil & gas. One Step In Foundation, Getches-Wilkinson Center for Natural Resources, Energy, and the Environment at the University of Colorado School of Law, *Boulder, CO - April 9 - 10*

Transportation. R Street Institute, Study presentation and panel discussion on Capitol Hill, *Washington, DC - April 14* (not charrette format).

Generally, most groups followed the CLEAN-TAX-CUTS analytic approach proposed by the Columbia group – break the analysis into three question buckets: What is “clean” – the metrics of sustainability that matter – for that sector? What taxes can we cut – who is making taxable profits and what taxes do they pay – in order to

⁷ To put it another way, clean tax cuts stand apart as a unique, new *laissez-faire* solution to the challenge posed to *laissez-faire* capitalism by waste, pollution, free-riders and negative externalities. With respect to other intellectual sources, [the core Clean Tax Cuts concept](#) combines insights from Pigouvian, supply-side and neo-Keynesian economists.

⁸ Fun facts about *laissez-faire*: (1) One anecdotal origin is the writings of sinologist François Quesnay, a translation of the Taoist concept of Wu-Wei. Sometimes translated in English as “effortless doing” or “action without-action,” wu-wei became an important tool of Confucian public policy, “rule by non-action,” during the Qin and Han dynasties. (2) *Laissez-faire* was first introduced in print to English speakers, in 1774, by none other than American founding father, Benjamin Franklin.

identify points of leverage in that sector? What kind of cuts, or specific tax rate reduction mechanisms, would appear most effective and well-accepted in that sector or market? Then, what proposals satisfy all three considerations

to define a specific CTC mechanism?

These groups have *together* successfully designed a set of simple, high-impact CTC mechanisms.

Preliminary Sector Reports and CTC Mechanism Summaries

Preliminary reports were presented by all working groups at Earth Day Texas 2017 (now EarthX) in Dallas. Those reports and short CTC mechanism summaries can be found posted at www.cleantaxcuts.org. Public and expert com-

ments are welcome. Comments received as of August 2017 are reflected in the discussion below, which offers the most current insights available. Preliminary sector reports will be updated as new information arises.

OVERVIEW of CLEAN TAX CUTS MECHANISMS: Equity vs. Debt

Equity-Side: Clean-Product-Based CTC vs. Debt-Side: Clean-Asset-Based CTC

Two leading categories of CTC mechanisms have emerged for accelerating profitable clean investments (one appropriate for debt, the other for equity), each offering a broadly applicable, metrics-based method on which to reward beneficial environmental impact performance:

Equity-Side: Clean-Product-Based CTC: Rewards equity investors (owners, partners and shareholders) with tax reduction tied to annual share of income derived from sales of (or rents from) property, plant and equipment, commodities and consumer goods with known waste and pollution reducing environmental benefits.

Debt-Side: Clean-Asset-Based CTC: Rewards debt investors with tax exempt interest on loans and bonds financing deployment of pre-qualified “clean” assets with known waste-reducing environmental benefits;

Before describing specific CTC mechanisms, we should first understand a key big-picture distinction here: for Equity-Side Clean-Product-Based CTC tax reduction is tied to firm perfor-

mance, as defined by how much clean product is sold as a percentage of total sales, and how quantifiably clean the product may be – both of which could vary annually.⁹

For Debt-Side Clean-Asset-Based CTC, tax reduction is tied to historical asset class performance for the pre-qualified clean assets being deployed. But on the debt side, firm or future project performance is *irrelevant* (short of fraud or bankruptcy) to future tax rates on debt that finances clean assets.

Why this difference?

Since returns in equity markets are based on actual market performance of securities, Clean-Product-Based CTC, rewarding actual firm performance with respect to clean product sales, is a good fit there. It conforms to equity market expectations that rewards relate to performance.

But in debt markets, CTC based on actual firm or project environmental performance would NOT work well at all. Debt markets explicitly seek to decouple market performance from returns as much as possible. Loan and bond

⁹ It is possible to imagine other equity-side performance-based CTC mechanisms, determined, for example, by a corporate sustainability accounting score, reflecting overall corporate practices. But such sustainability accounting standards are not sufficiently developed at present, nor are there enough certified sustainable accountants in the workforce today, to physically do all the accounting and reporting work that might make such proposals workable. However, if that changes, this could be one possible evolution of the CTC concept.

payments are usually guaranteed, predictable and secured by assets. Risk-averse debt markets will likely not accept performance-based CTC mechanisms where tax-exemption could be lost based on future impact assessments. Such a mechanism would introduce not only unacceptable risks for investors, who demand predictable returns, but would complicate issuance, and introduce a level of unaccustomed government interference that would chill the market. A non-starter for debt markets.

Clean-asset-based CTC, however would likely work extremely well for debt markets, since it avoids the above problems. By basing tax reduction on historical environmental performance of a given asset class, it decouples tax rewards from future environmental performance of any specific project. That matches the needs, expectations, and existing practices of debt markets (decoupling investment profits from project performance to make returns predictable). It creates a sound basis for an environmental impact incentive¹⁰, reduces the possibility of “green washing” (which worries some green bond market observers) but also keeps financial regulators out of impact assessment.

This is important.

CTC works differently for debt vs. equity. These two capital markets work powerfully together, precisely because they meet different needs. CTC debt and equity mechanisms can also work powerfully together. But such mecha-

nisms must fit the varying needs and expectations of each capital market and sector – which could be the difference between working very well, and not working at all.

One shared characteristic of all thriving capital markets, debt or equity: issuance and investment must be easy, and effective regulators must do their job with finesse, to avoid any unnecessary interference, risks and costs that might chill the market. CTC mechanisms must not introduce any heavy-handed regulations, and should keep financial regulators (IRS, SEC, US Treasury) out of the business of impact assessment, about which they know little or nothing.

Any impact certification or pre-qualification of lists of clean assets and products should stay squarely with legislatures and non-financial agencies (EPA, NHTSA, etc., or NGOs) who usefully already play a critical role in this area through certification and standards programs like CAFE, LEED and ENERGY STAR. With respect to possible CTC implementation, determinations by any such chosen standard-setting organizations should be accepted without second guessing by all financial agencies. That would keep issuance and tax reporting cheap, easy and uncomplicated. For bonds, that would also keep returns predictable, and financial regulation of issuance pretty much as it is now.

Here is an example of a clean-asset-based CTC mechanism:

Debt-Side: Tax-Exempt Clean Asset Bonds (CABs)

One of the most intriguing, broadly applicable CTC proposals comes out of the Columbia University working group led by SIPA Energy & Environment, and the Sabin Center, which focused on the application of CTC to green bonds. [Columbia’s tax-exempt Clean Asset Bond \(CAB\) proposal](#) would allow corporations

and banks to issue tax-exempt debt financing (green bank loans and green bonds) for manufacture, deployment and operation of assets and technologies with proven environmental impact. For example: zero emission power sources, electric car factories, or equipment reducing waste and emissions from oil and gas produc-

¹⁰ CABs qualify projects for tax reduction in a manner similar to that used for most solar and wind tax credits (based on the emission-free nature of assets deployed). By contrast, CABs are much broader-based (incorporating more kinds of waste-reducing clean assets) and more technology and sector neutral.

tion.¹¹

Privately issued tax-exempt green bonds would form a new class of security, “blending characteristics of tax free munis (\$3.7 trillion market) and higher yield taxable corporate bonds (\$35 trillion market)” – but potentially more attractive than either trillion dollar security class. These new bonds would offer the lowest cost of debt for issuers, and the highest tax-free return for investors – a better deal for both issuers and investors than anything else they can get.¹² The market potential appears significant, according to [some leaders in clean infrastructure deployment](#).

Every sector studied has expert-compiled lists of such high-impact technology. CABs and tax-exempt loans can help finance a wide variety of clean infrastructure in a simple, uniform manner that is metrics-based, and technology/sector neutral. They offer a potential CTC mechanism for sectors not yet studied – perhaps, say, to finance PP&E and operations that collect and recycle waste plastic, or operations that retire and recycle used vehicles, or high-emission power generation and manufacturing plants; or maybe for ecotourism or other operations benefitting rainforest, coral reef and other wild ecosystem conservation.

CABs could become policy in a variety of ways: as part of either federal tax reform or infrastructure legislation, or as a state level policy (for California or other high-income-tax states). Or perhaps they might offer a promising basis for an international treaty or UN agreement on

global tax exemption for green bonds.

The Columbia tax-exempt Clean Asset Bond proposal would work well for debt markets because it meshes with needs and expectations. CABs are targeted, like most corporate bonds, at asset-backed project finance. They keep returns predictable and issuance easy, because use of lists of pre-qualified high-impact assets make qualification automatic for such projects, without involving financial regulators in impact assessment. Tax-exemption for municipal bonds is also the most well known precedent for tax reduction in debt markets, so tax-exemption for CABs makes sense as a familiar mechanism.

Tax-exemption also makes sense because debt is used as leverage to drive profits to the equity side. Tax-exempt CABs allows governments to ride this leverage. They can offer a very strong incentive for clean infrastructure financing, but still recoup significant tax revenue on higher equity side profits – without giving up too much on the debt-side because rates of return, and share of overall profits, are lower there. That would argue that CTC tax rate reductions on the equity side should be more modest, to capture much of that increased profit as tax revenue, to be as fiscally sound as possible. Such a combination would likely score well fiscally, and deliver a high impact.

Consider, for example, the following equity side CTC mechanisms, and how they would interact with CABs:

Equity-Side Clean-Product-Based CTC: Auto and Power Sector

Perhaps the simplest [Clean-Product-Based Equity-Side CTC mechanism is that for the automobile industry](#). First suggested by David

Parham, an analyst for the Sustainability Accounting Standards Board (SASB), and further developed by Ian Adams, R Street Institute

¹¹ May 2017 saw [the first issuance of a green bond by a major fossil fuel company](#), to finance equipment intended to increase the energy efficiency and reduce the emissions of their oil processing facilities.

¹² A tax-exempt US corporate green bond market could eventually become significantly larger than the low yield muni-bond market, which relies on a smaller market of HNW individuals and does not attract many institutional investors looking for higher yields. But [82% of the US holders of the much larger US corporate bond market are taxable individuals or entities](#), and would likely invest in a high-yield tax-exempt corporate bond. Pension funds are tax exempt, but only account for 11% of the US corporate bond market. Right now, pensioners are taxed on pension distributions. Tax-exempt green bonds could be made attractive to pension funds if the tax-exemption on that income flowed through to pensioners by law.

scholar, auto sector CTC rewards sales of cars that meet or exceed CAFE standards.

“Thanks to CAFE, we know the average vehicle fleet emissions for every automobile manufacturer. It would be a simple matter to take that number, and turn it into a tax rate: the lower the fleet emissions, the lower the tax rate. Firms with cleaner fleets would gain the competitive advantage of lower taxes and cost of capital, and higher profits, over less efficient firms.

If such rate reduction, tied to clean product sales, were applied to all capital return taxes (corporate income tax as well as taxes paid by investors on capital gains and dividends) that would provide a very powerful mechanism to drive the automobile industry ever-cleaner. Since all investors, management and employees have stock packages, the value of which increases as taxes go down, CTCs applied to all investor taxes present a powerful point of leverage to incentivize and align corporate behavior and culture, at every level, with the goal of reducing waste and inefficiency.”¹³

Again, equity side CTC tax rates need not be zero. Equity-side taxes could be reduced, say 10% – 30%, on a sliding scale: 10% off for meeting CAFE emissions targets; 30% off for zero emissions; and a sliding scale between those levels, averaging 20% off.

The auto industry combination of debt/equity CTC mechanisms appears powerful. CABs would finance and drive down the cost of capital and outputs for (a) factories manufacturing highly efficient, low emissions automobiles and key components, like batteries, (b) clean infrastructure, such as EV charging and alt-fuel stations powered by zero emission energy sources. Such increased financing would drive higher profits to the equity-side, where a more modest tax rate cut for Clean-Product-Based

CTC would further steer auto industry decision making in the direction of waste reduction, and further reduce the cost of clean cars, but also collect a sustainable portion of the increased profit as taxes.

The power sector working group, led by Chip Comins, Chairman and CEO of the American Renewable Energy Institute, and Gov. Bill Ritter, Jr., Board Chair of the Energy Foundation, suggested a similar debt/equity combination for [the power sector](#). Utilities and other power providers (and investors and employees) can be strongly motivated with modestly lower tax rate rewards on the zero emissions energy they sell (applied on corporate and investor taxes) while on the debt-side, tax-exempt Clean Asset Bonds would increase the supply and drive down the cost of zero emission power and supporting infrastructure.

The power charrette equity-side CTC mechanisms were inspired by ConservAmerica’s “Zero Regrets Energy Policy,” proposed by Executive Director Paul Walker.¹⁴ Zero Regrets suggests a zero tax rate on revenue from all sales of zero emissions electric power, whatever the source. However, participants generally felt total equity-side tax-exemption was not necessary if more modest equity-side tax reduction were applied on both corporate and investor income taxes, and especially if combined with tax-exempt CABs. That combined proposal would likely score better in Congressional Budget Office fiscal analysis, than current policy or the “Zero Regrets” 0% tax rate alone. Such powerful incentives would effectively end utility industry opposition to renewables, with the carrot of higher profits.¹⁵

These auto and power sector proposals appeared to most expert participants to be poten-

¹³ Auto sector CTC is arguably the most performance-based CTC mechanism yet designed, since tax rate reduction can be keyed off a single metric, one number (average vehicle fleet emissions) for an entire firm. Alternatively, tax rate reduction could be tied to emissions for each model line vs CAFE requirements for that line, and applied to returns associated with the proportion of revenue from that model line.

¹⁴ Mr. Walker has also contributed to overall CTC concept development with respect to other sectors.

¹⁵ Some experts suggest that a competitive framework for including zero-emission power sold by third party firms and utility customers to the grid may increase the pace of decarbonization. They suggest some further thought should be given to the extent to which it is or is not in the public and national security interest for the monopoly privileges of utilities to extend beyond energy distribution into generation, as we contemplate the build-out of new low emission power generation.

tially powerful mechanisms, and precisely metrics based. They should be impact modeled with a variety of configurations, tax rates and assumptions, with thought given to how such proposals might be developed further in the context of state and national political realities.

CTC mechanisms could also be considered to encourage the retirement and recycling of older model, high-emission vehicles. Since this would promote GDP growth from the purchase of new, low-emission vehicles, a lower, even 0% tax rate on income from such recycling should be considered, to encourage it as much as pos-

sible. Similar CTC mechanisms should be considered to accelerate the retirement, recycling and/or upgrade of older, high-emission power and manufacturing plants.

In addition, auto sector CTC mechanisms may be broadly applicable to other transportation and equipment manufacturing industries (e.g., truck, tractor, construction and industrial equipment, and airplane, boat, and ship manufacture, for instance), a possibility that deserves exploration.

Sectors with CTC Barriers: Finding Points of Leverage & Profit

Of course, not all sectors have as perfect fundamentals for CTC implementation as the auto and power industries. From the start of the CTC public discussion a year ago and more, astute participants suspected that CTC mechanisms would be simple to design for these sectors. Both sectors have easily understood and well reported metrics. The core activity of both sectors is dominated by profitable business that would respond well to tax rate reduction rewards on those profits

These conditions do not hold true for every sector studied. Farmers, for instance, rarely make a taxable profit, and consensus has not yet been reached on sustainability standards and metrics for farming. Real estate has several robust metrics systems in wide use (ENERGY STAR, LEED) but a substantial portion of core sector participants (commercial landlords) are not taxable or have other situations where efficiency upgrades would be difficult to incent or implement. Oil & gas usually has profitable core activities, but the measurement technologies currently in place do not accurately measure emissions, and robust standards for certification of pollution-free operations do not yet exist. Clean tech innovation is often pre-profitable, and so new that consensus on impact is often

unsettled, if policy makers know about the new technologies at all.

Nevertheless, in all these sectors, we can still design effective CTC mechanisms. We can do so by finding points of leverage: (a) key sector participants who are making substantial profits, who can be incented in such a way that helps move the entire sector; (b) clean products, assets and technologies in that sector that deliver a quantifiable waste-reducing impact, and (c) new points of leverage we can create, by designing and implementing more robust certification standards and measurement technologies that allow us to identify sustainable or regenerative operations in that sector. Put these elements together, and we can apply clean asset and product based CTC, debt and equity mechanisms, to the clean products, assets, technologies, operations, and profitable taxpayers we have identified.

In addition, charrette participants suggested a number of CTC mechanisms to incent, directly, non-taxpayers, unprofitable or pre-profitable clean solutions, and situations where mixed rights to assets (eg. landlord - tenant arrangements) create barriers to clean solution implementation.

CTC for Energy Efficiency in Real Estate

The real estate working group, led by Steve Nadel, Executive Director of the American Council for an Energy-Efficient Economy (ACEEE), focussed on commercial real estate owned by REITs, LLCs and LLPs, and took a [somewhat different approach to tax rate reduction](#) (but still clean-product-based) proposing simply that revenue from ENERGY STAR certified buildings should be taxed at the long-term capital gains tax rate.¹⁶

ACEEE went further than other charrette hosts in impact modeling their proposal. Their analysis shows that the above CTC mechanism would save 45 trillion BTUs over 10 years from the upgrade of 2.5 billion sq.ft. of commercial space. However, the core proposal limits the target for CTC to only 30% of the commercial market owned by REITs, LLPs and LLCs, and, according to the ACEEE analysis, would actually result in the upgrade of only 26% of that.

A number of proposals were made to expand the application. The group agreed CTC should reward not only high achievers, but strivers. To that end, the group thought the same tax rate reduction should apply to building owners who improved their building Portfolio Manager ENERGY STAR score 30%, regardless of whether they achieved scores required for certification. This proposal was not modeled, but doing so in the future would be useful, as it could substantially expand the application..

The group also examined potential CTC

mechanisms that could work for nonprofit and government owners, owner occupied buildings, and barriers to improvements created by the competing interests inherent in landlord/tenant situations.

One CTC mechanism emerged from the charrette discussion that could cope with all of these barriers: **immediate expensing**, a proposal borrowed from the GOP “Better Way” tax plan, could apply to a far broader portion of commercial real estate, to all profitable taxpaying owners other than just REITs, LLPs and LLCs. ACEEE modeled this proposal as well, and found it could save 23 trillion Btus over ten years from the renovation of 1.25 billion sq. ft. of commercial real estate.¹⁷

In addition, some participants suggested that if the tax deduction resulting from immediate expensing were assignable to tenants or contractors, or tradable in tax equity markets, **immediate tradable expensing** could provide a mechanism to facilitate renovations that require landlord/tenant cooperation, or to incent nonprofit and government owners to make upgrades.¹⁸

The impact modeling in the ACEEE report shows that CTC equity mechanisms (alone) could have a beneficial effect on a large scale. However, what is shown is just a first pass, likely an understatement, and not the optimal configuration that further analysis and design work could produce. CTC policy design and impact

¹⁶ The reasoning here is that the capital gains rate (currently ranging from 15% to 20%) establishes a precedent for a “fair” rate for tax rate reduction deemed to be in the public interest. One might extend this observation to say, if capital investment warrants tax rate reduction because it is in the public interest, clean capital investment is even more publicly beneficial, and so deserves additional rate reduction. So clean investment income might be at the capital gains tax rate, rather than ordinary income tax rate, and clean capital gains might be half the ordinary capital gains tax rate. However, the proposals in the ACEEE report include tax reduction only for income, not capital gains, from clean investments, because capital gains is only a small portion of the income for most REITs.

¹⁷ Immediate expensing is essentially the same thing as “clean expensing,” a concept raised at [the first CTC charrette held at Columbia during September 2016](#). The real estate charrette provided the first actual application for the concept, which has been picked up by several of the other working groups designing solutions to CTC barriers.

¹⁸ Although this proposal could be usefully modeled, to the extent it involves tax equity trading, it may suffer from the same drawbacks as tradable tax credits. So it is well to note, profit-based CTC, applied to products/assets like solar panels and efficiency equipment identified in the ACEEE report would provide a strong indirect incentive for non-profit and government organizations to renovate by simply driving down the cost of clean assets, technologies and products used in such renovations. This is another CTC effect that should be modeled.

modeling should certainly be pushed further, both to cover much more of the real estate market, and to find the optimal mix of complimentary CTC debt/equity mechanisms and tax rates. As it is, the report mentions that residential real estate makes up 75% of the global real estate market... but the CTC mechanisms in the ACEEE analysis do not address the residential market at all. Since 35% of US households rent, the same kind of CTC mechanisms could incent

those profit-making residential landlords. The modeling also does not attempt to include the proposals for tax-exempt green bank loans and bonds for real estate. A further real estate charrette considering debt/equity CTC mechanisms should identify the various kinds of clean assets and products (PP&E) that should be incented in construction and renovation, and the potential means whereby CTC mechanisms might drive down those costs.

Farming & Forestry, Oil & Gas, Clean Tech

Expanding clean asset and clean product deployment via better measurement methods, standard and certification should be a priority for these sectors. Well-developed certification and standards programs, based on easily measured and widely reported metrics, allows precise, directly applied, performance-based CTC for auto, real estate and forestry sectors. CAFE standards allows us to directly incent automakers and dealers. The EPA's ENERGY STAR program allows us to directly incent real estate investors in both debt and real property.

Certified Wood programs allow us to directly incent both forest owners, as well as resellers of certified wood products, with debt and equity side CTC. That would not be possible without existing forestry certification programs, which is what allows us to identify the sustainable producers and products that merit a tax rate cut.

The lack of consensus on certification, standards and the lack of implementation of available measurement technology is precisely what limits directly applied, performance-based CTC for sectors like farming, oil & gas, and cutting edge clean tech.

Right now, there is no broad consensus on a single certification standard that covers the wide variety of **farming** techniques that claim to be sustainable or regenerative. We have no easy way to identify most of the sustainable producers and products. Better certification would

make CTC for farming more broad-based and powerful. *Certified Sustainable* farms could then receive tax free loans, and buy tax free crop insurance and tax reduced equipment and supplies. That would reduce the cost and increase the profits of sustainable agriculture, and facilitate financing. Certified sustainable farm product sales could then reduce the taxes of distributors and retailers, who would see the financial sense in expanding this market, driving vastly increased demand for sustainable agriculture.

But it all hinges on certification. Note as well, that since few farmers make taxable profits, certification of sustainable farms and farm product allows us to directly incent those players that are making money in agriculture: the agricultural suppliers, and the food distributors and resellers. Taken together, these are the key points of leverage that could allow us to accelerate sustainable and regenerative farming practices.¹⁹

USDA Organic certification is perhaps the closest we have to a widely-accepted standard with a recognized sustainability impact. The Nature Conservancy led working group suggested CTC implementation could start there. But improved, uniform sustainability certification, covering a wider variety of agricultural methods with sustainable/regenerative impacts, would be preferable, and an obvious next step for CTC design in agriculture.

¹⁹ Agriculture has a few identifiable "clean assets" that might be financed by clean-asset-based tax exempt loans (and bonds). For instance, no-till tractors and anaerobic digesters. In addition, [The Nature Conservancy CTC charrette reported](#) a number of other possible CTC mechanisms that could be helpful.

Subject to fossil fuel price swings, core businesses in **oil & gas** production and processing do make a taxable profit, as do suppliers and resellers. So there are viable points of leverage for CTC up and down the O&G supply chain. What is missing is robust certification of facilities, and implementation of currently available mass balancing technology which would make waste emissions measurement precise and CTC incentives more direct and powerful. Fortunately, even without improved certification, O&G has another currently available point of leverage. The EPA publishes lists of Reasonable and Best Available Control Technology ([RACT/BACT](#)) known to reduce emissions from O&G production, transport and processing. That, and any leak detection and measurement equipment, would be very useful to include in any list of clean assets and products for debt and equity CTC. Deployment of such technologies could be accelerated with tax-exempt clean-asset-based green bonds and equity-side clean-product-based CTC. This will doubtless help significantly in lowering costs and increasing profits for such waste reduction, and would be a good Phase 1 for CTC implementation in O&G.

Next steps in CTC development for O&G:

1. Impact modeling for CTC mechanisms suggested by the O&G charrette:
2. Further charrettes on a) CTC for water pollution, earthquakes, and other negative externalities of the O&G industry; and b) development of robust certification for O&G facilities taking into account all externalities.

Certification and standards for the broad-ranging **cleantech** sector, with respect to emissions reduction potential, are challenging because of the number of technologies, and many assumptions required about the nature and fate of the waste being avoided²⁰. Another complication seems to be that the technologies, such as advanced fuel cell, pyrolysis, gasification, air capture and CCS remain in rapid, evolving and continuous development and are often not fully commercialized. Clean tech certification will require procedures for rapidly evaluating and scoring new technologies and improved designs.

While clean tech CTC can be initially guided by expert opinion as to which technologies actually deliver the impact they claim, robust certification would put clean tech CTC on a stronger footing.

However, even without certification, it is easy to spot some clean tech assets and products. Any technology capturing carbon (from flue gas, water or air) is potentially a clean asset, and the captured carbon raw materials and end products made therefrom would qualify as clean products – especially if the end product is solid, and likely to remain so for some time, without producing emissions.

Next steps for CTC development in clean tech should be the development of a comprehensive list of clean technologies that deserve impact evaluation for possible treatment as clean assets and products, so their deployment can be accelerated by CTC debt/equity mechanisms. This should help define possible standards and certification systems for evaluating future new technologies. CTC mechanisms proposed for encouragement of pre profitable innovation (involving immediate tradable expensing or capital gains exemption) need to be more precisely defined and modeled.

²⁰ For example: a gasification of biological waste reduces GHG emissions far more than gasification of discarded office equipment... though that may have other environmental benefits. But the impact scoring of the technology may change according to the use.

OTHER CTC MECHANISMS

Charitable Deductions for Conservation

Charitable deductions for gifts of cash and land for conservation, as well as for gifts by landowners of conservation and public access easements, are a set of pre-existing (and highly successful) CTC mechanisms which establish a cornerstone of US conservation policy with respect to private lands. Since their US introduction in 1976, the use of charitable conservation easements, often involving a role for charitable and public land trusts, has exploded, with [>56 million acres conserved as of 2015](#). The value of such easements has also been steadily expanded legislatively at federal and state levels, Colorado and Virginia even making them tradable, which led to a rapid >2000+% increase in protected acreage in those states. American forests have rebounded in tandem, [with 19 million acres of new forest added between 1990 – 2010](#).

The Nature Conservancy (TNC) led CTC working group voiced concerns that more is needed, to prevent habitat fragmentation. Conservation easements could also be expanded not only to preserve farm and forest lands, but to guarantee ongoing sustainable or regenerative practices.

To further incent and expand such conservation, the TNC working group proposed that landowners who sell land and/or easements for conservation purposes should not be subject to

capital gains tax on those sales, since such sales are often to charitable or public land trusts pursuant to a charitable purpose. This would help land trusts conserve more land at a lower cost, and fill a gap left by the existing tax deductible gifting mechanisms, which are not useful where landowners have little or no taxable income.

The success of tax deductible charitable conservation easements in the US suggests that a similar mechanism might be useful in the international context of tropical rainforest deforestation. The problem is, such easement rights only work where private property rights are well defined and enforceable, and that is not the case in most of the countries containing tropical rainforests. Indeed, the lack of well-defined property rights in the rainforest explains why so much rainforest has been destroyed: often, no one has an enforceable legal claim to the land, leaving it without effective stewards, and so open to damaging exploitation – with public officials either unable to police such vast acreage, or actively complicit in the exploitation. A variety of CTC mechanisms, including tax favored conservation easements, could effectively combat rainforest deforestation, but only if tied to a framework of land tenure property rights and land title clarification.

Voluntary Transition to Profit-Based CTC

Most working groups proposed a voluntary transition from current policy to CTC mechanisms, with either an immediate or gradual phase out of subsidies over a short period. This would be more politically palatable to those who

favor current policy, but also likely to result in rapid transition, since CTC would likely be more beneficial for most profitable companies, and a competitive advantage for the most profitable firms.

Clean Repatriation

Despite the fact that several participants in the the first CTC charrette expressed support for Clean Repatriation, a proposal first suggested

by Michael Kinstlick, CEO of Coppersea Distilling and previously, Head of Standard Setting for the Sustainability Accounting Standards Board,

no group has studied this concept in depth. In general, Clean Repatriation proposes that companies that bring home foreign profits and invest them in clean assets and infrastructure (directly or through Clean Asset Bonds) should pay a reduced tax on those repatriated profits. Since there are an estimated \$2.5 trillion of US corporate profits abroad, clean repatriation could have more than a trillion dollar impact. However,

there are many proposals for how to incent repatriation for a wide variety of purposes, so the proposal would face stiff political competition.

Still, since the potential impact is trillions of dollars in new clean infrastructure investment, the proposal deserves further study and a place in the repatriation discussion.

Next Steps for Clean Tax Cuts Development

The most promising CTC mechanisms developed to date should be analyzed and modeled for economic, fiscal and environmental impact. Teams of economists and environmental scientists will be needed for that work.

CTC mechanisms might be considered and modeled in varying configurations for infrastructure legislation, tax reform legislation, international or global agreements, or stand-alone legislation for a sector.

Consideration should be given for how best to extend promising applications more broadly and democratically. For instance, should the auto industry CTC mechanisms be refined at the national level, developed as state policy for California (with the highest income tax rate and a history of leading edge policy experiments), or adapted for other transport industries, such as airplanes or trucking? Should commercial real estate CTC mechanisms be adapted to residential real estate, and apply as much to those showing improvement as those achieving the highest standards?

How can public participation in clean capitalism (all sectors) be made as broad and democratic as possible?

For all sectors studied, more thought should be given to how CTC debt and equity mechanisms would work best together in each sector, how green loans might be bundled into green bonds, what tax rates might optimize impacts.

With respect to clean asset based loans and bonds, lists of assets that might qualify should be compiled, and the historical impact data organized and set forth, so that recommendations

can be rigorously evaluated and justified regarding qualification. Such lists should be in place for each sector studied.

Farming, oil & gas and clean tech will need to improve and standardize measurement methods, and certification. Oil & gas will need to explore CTC related to other negative externalities.

Some of the above sectors encompass technologies that stir passionate debate: nuclear, hydropower, coal, gas, oil, renewables, fuel cells, regenerative farming of carbon-negative beef, etc. GRF encourages the study of the application of CTC to these controversial industries and practices. Especially those deemed risky, expensive or unreliable by some. This may prove useful because participants in the CTC working group have observed that CTC can actually help transform and lessen the risks and costs inherent in a technology or industry. For instance, CTC can help reduce emissions in oil & gas. CTC may even be able to accelerate a shift away from combustion to other forms of energy extraction, such as electro-chemical conversion, that reduce pollutants and emissions dramatically. If so, that would transform fossil fuels into a clean energy and carbon materials business. Since a lot of risk comes from waste, and CTC targets waste, CTC also reduces risk. Some thoughtful analysis of CTC applied to controversial technologies might produce unexpected insights.

A number of groups have proposed new areas for CTC application.

Ocean Recovery Alliance, Mission Blue and

Grace Richardson Fund conducted a preliminary mini-charrette in June 2017 on the application of CTC to waste plastic, and intend to conduct a full charrette in the coming months. This would be a prelude to further charrettes on the application of CTC to other ocean issues, such as acidification, agricultural and industrial water pollution, overfishing and species preservation.

Rainforest Trust and Grace Richardson Fund have discussed the possibility of a charrette on the application of CTC to rainforest conservation, possibly in conjunction with other co-hosts.

The Atlantic Council and Grace Richardson Fund are discussing forming a working group to

explore the tax-exempt green bond concept as the basis for an international agreement involving European nations or the European Union, as a first step in exploring the feasibility of such an agreement globally.

The Atlantic Council also is considering convening a charrette on the opportunities for millennial leadership in the design and development of CTC as next generation policy.

Please visit the Clean Tax Cuts website to review all of our reports and media.

<http://www.cleantaxcuts.org/media>

CONCLUSION: The need for the Clean Capitalist Leadership Council

CTC mechanisms developed to date look promising. Many intriguing paths of development are open possibilities.

At this point, the opportunities for CTC development require the guidance of a collaborative group of scholars, institutes and supporters. Fortunately, CTC development has attracted diverse, enthusiastic supporters, from the start. A growing coalition of clean capitalists, green conservatives and conservation donors has formed around the concept, mirroring the transpartisan coalition of think tanks, experts and university scholars that have done the actual work of the Clean Tax Cuts Working Group.

That coalition is now ready to form **The Clean Capitalist Leadership Council**, a group of donors and thought leaders that will not only guide future clean *laissez-faire* policy develop-

ment, but also consider how best to make the case, at every level, for broad-based, democratic clean capitalism and a healthy, beautiful, clean planet.

The Clean Tax Cuts Working Group and the new Clean Capitalist Leadership Council intend to gather in New York City in September 2017 to evaluate how best to proceed. Anyone wishing to engage in this work is most welcome indeed, and should contact the Grace Richardson Fund for further information.

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