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**About Smart Prosperity Institute**
Smart Prosperity Institute is a national research network and policy think tank based at the University of Ottawa. We deliver world-class research and work with public and private partners – all to advance practical policies and market solutions for a stronger, cleaner economy.

# TAKING THE TAX SYSTEM TO TASK:
## CANADA NEEDS TO ALIGN FEDERAL TAX POLICY WITH CLEAN ECONOMY GOALS

## Executive Summary

Tax policies can be critical measures to help support cleaner economic growth, innovation and create jobs that align with net-zero emissions objectives. They address two distinct market failures when it comes to clean innovation: knowledge spillovers, wherein no one company can fully capture the benefits from their innovations, and negative externalities from pollution, which are the negative impacts that occur externally and impose costs on society without being seen on the books of emitters. Smart Prosperity Institute's previous work on clean innovation has identified that well-designed policies can help spur product development (*push*), support market entry (*pull*), scale production (*grow*), and improve the resilience and performance of the entire innovation system (*strengthen*).[1] All four of these components are vital to not only meet net-zero emissions goals and other environmental goals but also accelerate economic growth.

Fortunately, the federal government has already identified many of the tax instruments to do so. This includes a 50% corporate income tax cut, expansion of technologies eligible for Accelerated Capital Cost Allowance, and Investment Tax Credits (ImTC) for Carbon Capture Utilization and Storage (CCUS). These measures will help *pull* products from market entry into mass production. However, there are other pertinent challenges for the cleantech sector. Some of the major ones are lack of market demand, absence of manufacturing, insufficient capital for startups and scaleups, and retention of firms moving to the U.S. and other jurisdictions.

1 Brownlee, M., Elgie, S., & Scott, W. (2018). *Canada's Next Edge: Why Clean Innovation is Critical to Canada's Economy and How We Get It Right*. Smart Prosperity Institute. https://institute.smartprosperity.ca/sites/default/files/cleaninnovationinstitutereport-final.pdf

**Tax policies can be critical measures to help support cleaner economic growth, innovation and create jobs that align with net-zero emissions objectives.**

Some of these problems can be addressed immediately by providing greater clarity on existing tax measures and implementing new ones. However, other issues require deeper analysis of the cleantech ecosystem and equity effects of tax measures.

**Smart Prosperity Institute's recommendations for immediate action by the federal government are as follows:**

1. **Provide greater clarity on pledged initiatives** such as ImTCs rolled out in Budget 2021 to support CCUS and green hydrogen. Ongoing consultations for CCUS need to be completed and stakeholder consultations for green hydrogen tax incentives need to start;

2. **Improve competitiveness** by eliminating import tariffs on intermediate inputs used by Canadian cleantech manufacturers to reduce compliance costs and regulatory burdens;

3. **Identify bottlenecks to innovation and growth**, by defining the scope of analysis for tax study mentioned in Budget 2021. The study should be supplemented by a comprehensive review of the Canadian cleantech sector; and

4. **Increase equity and inclusion in the cleantech sector**, by launching a comprehensive Equity Diversity Inclusion (EDI) review of existing cleantech tax instruments and policies.

# Introduction

Accelerating clean innovation will not only help meet Canada's environmental and net-zero emissions commitments, but it will also secure competitive advantages that will help grow the economy and create jobs. Tax policies can help address two distinct market failures when it comes to clean innovation: knowledge spillovers, wherein no one company can fully capture the benefits from their innovations and negative externalities from pollution, where negative impacts that occur externally and impose costs on society are not priced properly. Well-designed cleantech tax policies play a vital role as they can enhance the four components of a clean innovation system:[2]

1. *Push* policies that move a clean innovation from idea to product;
2. *Grow* policies to bridge the gap between product and market entry;
3. *Pull* policies that help spur demand and take clean innovations from market entry to mass production; and
4. *Strengthen* policies that make the system as a whole more effective, connected and resilient, transforming clean innovations from fledgling markets into economic engines.

**Well-designed cleantech tax policies play a vital role as they can enhance the four components of a clean innovation system.**

The Federal Government's already-pledged tax measures take this need for systemic support into account. In Budget 2021, they have rolled out a series of such measures that were recommended by Smart Prosperity Institute (SPI). These include:

- Reduction of the federal corporate income tax rate by 50% for manufacturers of zero-emissions technology[3] and how that reduction could be implemented;[4]
- Expansion of the list of technologies eligible for Accelerated Capital Cost Allowance write-offs;[5] and
- Introduction of an Investment Tax Credit (ImTC) for Carbon Capture Utilization and Storage (CCUS).[6]

These measures, aimed at supporting the growth of Canadian clean technology, referred to as cleantech, are helpful. However, substantial challenges remain. Some of the major ones are:

- Lack of domestic demand for innovative cleantech;
- Disproportionate number of cleantech service instead of manufacturing firms, which are important to achieve environmental objectives;

2 Brownlee, M., Elgie, S., & Scott, W. (2018). *Canada's Next Edge: Why Clean Innovation is Critical to Canada's Economy and How We Get It Right*. Smart Prosperity Institute. https://institute.smartprosperity.ca/sites/default/files/cleaninnovationinstitutereport-final.pdf

3 Moffatt, M. (2021, April 12). *Budget 2021: How would a corporate tax cut for cleantech manufacturers work - and what could it accomplish?* Smart Prosperity Institute. https://institute.smartprosperity.ca/CleantechTaxCut

4 Government of Canada. (2021, April 19). *Rate Reduction for Zero-Emission Technology Manufacturers*. https://www.budget.gc.ca/2021/report-rapport/anx6-en.html#rate-reduction-for-zero-emission-technology-manufacturers

5 Islam, A. (2021, April 13). *Budget 2021: Modernizing the List of Clean Technologies to Incentivize Investments*. Smart Prosperity Institute. https://institute.smartprosperity.ca/Budget2021ACCA

6 Goldman, J. (2021, April 14). *Budget 2021: The US Tax Code and the Race for the Clean Energy Future*. Smart Prosperity Institute. https://institute.smartprosperity.ca/USTaxCode

- Dearth of domestic investment capital for startups and scale up of cleantech firms, the latter of which requires investments within the range of CS$50 to C$100 million; and
- Retention of innovative cleantech firms which move to the U.S. and other jurisdictions.

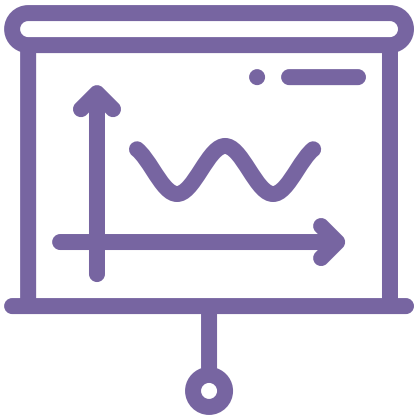
All these problems fit within the four components of the clean innovation system. To some extent, the first two problems related to product demand and manufacturing can be solved in the short run with greater clarity and implementation respectively. *ImTCs* for CCUS can *pull* the products by helping to spur market demand, thus incentivizing their production and help firms scaleup. However, the credit rate and implementation period for a CCUS focused ImTC needs to be determined immediately. Meanwhile, removing import tariffs on intermediate inputs for cleantech would help firms avoid compliance costs and regulatory burdens, acting as a strengthen measure and helping to boost cleantech manufacturing.

For the later issues, there are no immediate solutions. Instead, they necessitate a top down review of the cleantech ecosystem. Notably, Budget 2021 promises to undertake a study of the current tax environment, including taking stock of tax measures in the U.S. and other countries, to encourage clean economy businesses to invest, grow, and deploy solutions in Canada. This study needs to be started immediately and supplemented with a mapping of bottlenecks that are holding back the Canadian clean innovation ecosystem and an assessment of how much of it can be solved through different tax measures.

Critically, the country's tax environment needs to enable a more equitable cleantech sector. This can be achieved through an Equity, Diversity and Inclusion (EDI) analysis of tax policy measures. Notably, advancing equity is vital through all tax policy, but Canada needs to begin with a strong understanding of current impacts as a first step.

Tax policy is a powerful economic tool. SPI believes that the following four recommendations can help the Federal Government reinforce its 2021 budgetary and election platform commitments. It can also help Canada achieve its twin objectives of sustained growth and achieving environmental targets into the future.

# Recommendation #1: Provide greater clarity on pledged initiatives such as ImTCs rolled out in Budget 2021 to support CCUS and green hydrogen



**What is an investment tax credit?**

ImTCs lets individuals or businesses deduct a certain percentage of the capital costs of eligible investments, in this case cleantech equipment purchases, from their taxes. The tax credit takes the form of a rebate that mitigates the investor's tax liability. Generally, the credit is a set percentage on the initial capital expenditure and is received by the taxpayer in the same year the expenditure is made.

**Why is it needed? What problem does it solve?**

This is a *pull* policy to spur demand and take clean innovations from market entry to mass production. Carbon pricing does help firms pay for the costs of pollution and externalities. However, there is also a need for financial incentives that support investment for capital-intensive projects, and speed up the rate of adoption at the scale needed to meet climate targets. An ImTC will incentivize firms to make the capital investments, which in turn will increase adoption and create demand for eligible cleantech. As SPI previously highlighted, ImTCs have been successful in the U.S. in spurring clean energy (solar and wind) investments.[7]

**An ImTC will incentivize firms to make the capital investments, which in turn will increase adoption and create demand for eligible cleantech.**

**Progress to date**

The implementation of ImTCs in Budget 2021 was an important first step. However, the design of these credits - including the rate and implementation period - are not yet complete. Hence, it is crucial for the government to provide clarity on ImTC design and re-affirm their Budget 2021 commitments in Fall Economic Statement (FES) 2021.

## Recommendations

**1A. Complete the stakeholder consultations for ImTCs for CCUS and provide details on implementation.** The government has already called for stakeholder consultation on the design of the ImTC, and it is imperative that this be completed.[8]

**1B. Start stakeholder consultations for equivalent tax credits on green hydrogen**. As detailed in Budget 2021, during the CCUS consultation phase, the government has committed to examining equivalent tax support to green hydrogen producers.

7 Goldman, J. (2021, April 14). *Budget 2021: The US Tax Code and the Race for the Clean Energy Future*. Smart Prosperity Institute. https://institute.smartprosperity.ca/USTaxCode

8 Government of Canada. (2021, June 7). *Investment Tax Credit for Carbon Capture, Utilization, and Storage*. https://www.canada.ca/en/department-finance/programs/consultations/2021/investment-tax-credit-carbon-capture-utilization-storage.html

**The increased compliance cost not only makes Canadian cleantech manufacturers uncompetitive compared to their global counterparts but also fails to raise revenue for the government.**

# Recommendation #2: Improve competitiveness by eliminating import tariffs on intermediate inputs used by Canadian cleantech manufacturers

**What is it?**

Most intermediate inputs and parts used by cleantech manufacturers enter Canada tariff-free, either because they have a Most Favoured Nation (MFN) tariff rate of zero or they are imported from countries with which Canada has a free trade agreement. However, to not pay tariffs at borders under the free trade agreements, companies must comply with an onerous set of regulations and paperwork to meet the *Rules of Origin* (ROO) requirement of the goods.

**Why is it needed? What problem does it solve?**

This is a *strengthen* policy that makes the system as a whole more effective, connected and resilient. Complying with *Rules of Origin* regulations poses significant compliance costs on the cleantech manufacturers. The cost can be one per cent of total cost of import or more, depending on the size of the firm and their ability to comply. The increased compliance cost not only makes Canadian cleantech manufacturers uncompetitive compared to their global counterparts but also fails to raise revenue for the government.

**Progress to date**

Past federal budgets have engaged in selective tariff elimination, but none were targeted towards the cleantech sector. A 2021 piece by SPI provided a set of recommendations that may be taken into account during the FES 2021.[9]

## Recommendations

**2A. Set the MFN rates to zero for any product where the Federal Government collects almost no tariff revenue.** Setting those tax rates to zero effectively allows importers to bypass the onerous obligations of free trade agreements and their associated costs. This is low-risk because those imports almost always meet the *ROO* of one of Canada's free trade agreements. It would also reduce substantial paperwork burdens, as imports would no longer need to utilize burdensome ROO paperwork.

**2B. Target the reform towards cleantech manufacturers.** As a 2020 Toronto Region Board of Trade paper highlights, there are 29 different classes of products that can benefit from this tax reform.[10] These goods were collectively worth $8 billion in 2018. However, it may have resulted in cleantech manufacturers incurring a cost of $80 million in terms of compliance.

9 Moffatt, M. (2021, April 15). *Budget 2021: Eliminating import tariffs to grow the cleantech sector*. Smart Prosperity Institute. https://institute.smartprosperity.ca/CleantechTariffs

10 Chakarova, R. (2020). *WHEN THE COSTS OUTWEIGH THE BENEFITS*: A Proposal for Selective Tariff Elimination. Toronto Region Board of Trade. https://www.bot.com/Portals/_default/A%20Proposal%20for%20Selective%20Tariff%20Elimination.pdf

# Recommendation #3: Identify bottlenecks to innovation and growth by defining the scope of analysis for tax study mentioned in Budget 2021

**There are known gaps to growth for cleantech companies in Canada in need of further study.**

**What is it?**

The Budget 2021 document states that "the government will undertake an analysis to ensure that Canada keeps pace with the U.S. and other jurisdictions in providing the appropriate tax structures and incentives to encourage clean economy businesses to invest, grow, and deploy solutions here in Canada".[11] We recommend that the government complete this study to design cleantech tax policies to accelerate clean innovation. The study's scope should be twofold: identifying previously unreported and currently under-researched structural challenges within and outside Canada's cleantech innovation ecosystem, and highlighting solutions that can be implemented within the tax code to address these issues.

**Why is it needed? What problem does it solve?**

While it is unhelpful to speculate what unidentified challenges may emerge in an overview of Canada's cleantech sector, known gaps to growth that are in need of further study include: the current void in seed funding; underdevelopment of cleantech manufacturing; and lack of domestic investment capital for clean-tech financing deals in the C$50-100 million range.

Defining those barriers that are holding back the development of Canada's cleantech sector would create the research base to determine:

1. Where tax policy can have an impact on addressing development barriers; and
2. How tax instruments need to be designed to address the specific challenges Canada's cleantech sector faces.

In addition to reviewing our own cleantech ecosystem, Canada must look in depth at the actions of other leading cleantech economies. Mapping the direction of green industrial policies of leaders such as the U.S., Germany, Netherlands and the U.K. is critical, as it will help Canada determine sector-by-sector where it should compete or cooperate with other national industrial policies. By better understanding Canada's role in the global energy transition relative to other players, the government can determine where tax policy can be laid over with contextual advantages in geography, R&D, and other factors to bolster promising opportunities for clean growth.

11 Government of Canada. (2021, April 19). *Budget 2021*. https://www.budget.gc.ca/2021/report-rapport/p2-en.html#chap5

**Progress to date**

There has been no information on progress. Nonetheless, deepening understanding of the domestic and international landscape impacting Canada's cleantech tax environment is necessary to inform the latter half of the study's focus: the development of tax code-based solutions. While some information and context about sectoral challenges is known, a more fulsome assessment is required to evaluate the potential for tax policy to support clean innovation and growth.

## Recommendations

**3. Conduct a study, in the next 12-18 months, on providing the appropriate tax structures and incentives to encourage clean economy businesses to invest, grow, and deploy solutions here in Canada, as promised in Budget 2021. The study should include the following topics:**

- **Identify different tax credits that can be implemented for cleantech and the firms developing them.** For example, a federal Investor Tax Credit (IrTC) can be used as part of the *push* strategy for cleantech. IrTCs have been highlighted as a way to crowd in early-investment by providing a greater financial incentive to individual investors, who are heavily represented among Angel and Seed funding.[12] Currently, six provinces and one territory use IrTCs to bring in early stage capital for a range of sectors.[13] However, Ontario, Quebec and Alberta - the largest hub of cleantech producers and developers - do not employ IrTCs, providing an impetus for the federal IrTC.

- **Formulate a list of low-carbon and net-zero technologies that should be eligible for different tax credits.** Notably, the Budget 2021 document states that for corporate income tax cuts "…the Department of Finance Canada will regularly review new technologies that might be eligible, in consultation with Environment and Climate Change Canada, Natural Resources Canada, Sustainable Development Technology Canada, and other key stakeholders across government and industry…".[14] This review and inclusion process should be done for different low-carbon and net-zero technologies and encompass different tax credits.

- **Develop a system to integrate emerging technologies into existing tax credits.** Currently, tax credits are implemented for different technologies through regulation every year. However, as new technologies are developed, they need to be *pulled* towards the market. As a result, a system is required to integrate new technologies into a list of eligible technologies. This will enable tax credits to move at the speed of innovation, which is required to accelerate clean innovation.

- **Consider the EDI impacts of clean technology tax supports**. It is vital to design cleantech tax policies that integrate equity considerations to invest in people and businesses that have experienced historic barriers to accessing economic resources. Any studies on future support should include assessments of how the benefits from future instruments will be distributed amongst the population, and whether clean technology tax supports can be designed to redress, or at least not exacerbate, historic inequities or disparities.

12 Scott, W., & Elgie, S. (2019). *TAX INCENTIVES TO BOOST CLEAN GROWTH: INVESTOR TAX CREDITS AND FLOW-THROUGH SHARES* (p. 11) [Policy Brief]. Smart Prosperity Institute. https://institute.smartprosperity.ca/sites/default/files/taxcredit.pdf

13 Saunders, J. (2019, December 19). *Small Business Investor Tax Credit—KMSS*. Kenway Mack Slusarchuk Stewart LLP | Chartered Professional Accountants. https://kmss.ca/2019/12/19/small-business-investor-tax-credit/

14 Government of Canada. (2021, April 19). *Budget 2021*. https://www.budget.gc.ca/2021/report-rapport/p2-en.html#chap5

# Recommendation #4: Increase equity and inclusion in the cleantech sector by launching a comprehensive EDI review of existing cleantech tax instruments and policies

**By ensuring opportunities are available to all, we can maximize the potential of the sector to generate broad-based prosperity for more Canadians.**

### Overview

More than 80% of cleantech small and medium enterprises (SMEs) are owned by men, and less than 4% are owned by visible minorities.[15] These striking statistics indicate the extent of the lack of diversity and the unequal access to opportunities in the cleantech sector. Previous investigations by SPI highlight how gender and racial inequities in the cleantech sector go beyond business ownership to also include labour force participation and gender wage gaps.[16] Policies to promote the development of the cleantech sector must not overlook these dynamics, otherwise they run the risk of reproducing and exacerbating social inequities.

Well-designed cleantech tax instruments can promote industry development while also creating opportunities for underrepresented social groups, and fairly distributing the benefits associated with the growth of the cleantech sector. Inclusive tax policies can reduce inequality, increase access to opportunities, and expand the number of cleantech firms led by underrepresented groups. By ensuring opportunities are available to all, we can maximize the potential of the sector to generate broad-based prosperity for more Canadians.

It is vital to design cleantech tax policies that introduce equity considerations and invest in people and businesses that have faced historical barriers in accessing economic resources. It is necessary to improve the understanding of how current benefits associated with cleantech tax instruments are socially distributed, so that current and future policies aimed at improving equity within the sector can be designed with these realities well understood.

### Why is an EDI review needed?

Inclusive tax policy can both incentivize investments and production while promoting equal opportunities. Traditionally, an effective and fair tax policy is one that: treats contributors equitably and in proportion to their respective socioeconomic abilities; ensures that tax measures do not create unintended economic distortions; ensures that tax measures are as unburdensome as possible; and establishes clear and non-arbitrary processes in terms of time, quantity to be paid, and mode of tax payments.[17] Underlying these factors is the principle that taxation affects inequality mainly through the progressivity of the tax system, and that tax rates should increase in proportion to a taxpayer's income or wealth. These are

15 Government of Canada (2020). *SME Profile: Clean technology in Canada*. https://www.ic.gc.ca/eic/site/061.nsf/vwapj/SME-profile_Clean-technology-Canada_2-eng.pdf/$FILE/SME-profile_Clean-technology-Canada_2-eng.pdf

16 Smart Prosperity Institute (2021). *Let's commit to a truly inclusive green recovery: Ensuring gender equality in the environmental and clean technology sector will lead to a more equal transition to net-zero emissions.* https://institute.smartprosperity.ca/InternationalWomensDay2021

17 Leijon, L. H. af O. (2015). *Tax policy, economic efficiency and the principle of neutrality from a legal and economic perspective (Working Paper 2015:2). Uppsala Universitet*. https://www.jur.uu.se/digitalAssets/585/c_585476-l_3-k_wps2015-2.pdf

foundational principles for an efficient and fair taxation system, but they provide little guidance for the development of a tax policy that incentivizes cleantech investments, employment and productivity while broadening equality of opportunities by gender, race, and other socioeconomic status.

There is established research evidence suggesting that the structure of tax incentives affects both venture capital and private equity investments in cleantech[18], that tax incentives can incentivize the development of clean energy technologies (*push*)[19], and that production tax credits can affect the demand for cleantech (*pull*)[20]. However, tax policy analysis and debates tend to overlook gender, race, and other social dynamics, an oversight that has been pointed out for a couple of decades now.[21] There is a vital need to research how tax policy designed to promote the development and adoption of cleantech affects equity-seeking groups and communities in Canada. There is also a need for research evidence that can inform the design of accompanying tax expenditures and measures to reduce or address potential regressive tax effects.

More than highlighting how tax policies impact different social groups in Canada, research can also indicate if, and how, tax policies can meet the needs of a diversity of cleantech entrepreneurs and businesses led by minority groups.

## Recommendations

To advance inclusive growth, the cleantech sector has to expand equality of opportunities to all Canadians and permanent residents. Policies to develop the cleantech sector must consider the socioeconomic dynamics that hinder the participation and inclusion of equity-seeking groups in the cleantech sector. It is equally important to investigate the policy preferences of investors and the socioeconomic realities of cleantech businesses, especially those led by equity-seeking groups.

**4. Conduct an EDI review of tax instruments in the next 12 months that answers the following questions**:

- What tax instruments simultaneously encourage the development of cleantech and promote cleantech businesses led by members of diverse social groups?
- How can tax instruments designed for cleantech start-ups be developed in a way that is both equitable and efficient?[22]
- How can Canada mitigate and address potential tradeoffs between supporting clean economic growth and reducing inequality in tax policy?
- How do existing tax policies for the development and implementation of cleantech administer and promote access to tax benefits across social groups and businesses? How can they be improved to ensure beneficiaries receive the benefits to which they are entitled?

18 Lerner J. (2010), *' The future of public efforts to boost entrepreneurship and venture capital,' Small Business Economics,* 35(3), 255–264.
19 Olmos L., Ruester S., Liong S.-J. (2012), *' On the selection of financing instruments to push the development of new technologies: application to clean energy technologies,'* Energy Policy, 43, 252–266.
20 Hoppmann, J., Peters, M., Schneider, M., & Hoffmann, V. H. (2013). *The two faces of market support—How deployment policies affect technological exploration and exploitation in the solar photovoltaic industry*. Research policy, 42(4), 989-1003.
21 Young, C. (1999). *Taxing times for women: Feminism confronts tax policy*. Sydney Law Review, 21, 487-499
22 Bürer, M. J., & Wüstenhagen, R. (2009). *Which renewable energy policy is a venture capitalist's best friend? Empirical evidence from a survey of international cleantech investors*. Energy Policy, 37(12), 4997–5006.

# Conclusion

Tax decisions made now will be essential in crowding in the investment required to meet net-zero emissions and other environmental goals. For Canada to become a premier destination for some of this investment pool, it will need a tax system that supports Canadian companies, is attractive to investors, and aligns with broader goals for creating a greener and more inclusive society.

Policymakers must develop a better understanding of its domestic cleantech ecosystem as a whole, in order to determine where *grow*, *pull*, *strengthen,* and *push* tax instruments can be deployed to greatest effect. This comes from: a full overview of the bottlenecks holding back Canada's cleantech sector; an elimination of import tariffs on intermediate inputs used by Canadian cleantech manufacturers; an understanding of where other jurisdictions will be moving in the next few years; and how the benefits of the growth of our own cleantech industries can be spread more equitably via the tax system.

If Canada is willing to undertake this bold agenda to understand the challenges facing its cleantech sectors and remake the tax code in response, it will yield immense benefits for the nation's emerging net-zero aligned industries. Canada's tax system could be directed towards achieving an economy that meets the challenges of the climate crisis, while also driving national prosperity through the transformation of global society. Smart Prosperity Institute is committed towards facilitating a clean, prosperous, resilient and inclusive Canadian economy and we look forward to working with decision makers to enable this future.

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**Acknowledgements**

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