THE GLOBAL SUBSIDIES INITIATIVE

UNTOLD BILLIONS:

FOSSIL-FUEL SUBSIDIES, THEIR IMPACTS AND THE PATH TO REFORM

A Summary of Key Findings

GSI Global Subsidies Initiative
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APRIL 2010

The Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD) Geneva, Switzerland.

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FOREWORD

Our unrelenting appetite for fossil fuels is putting the planet at risk. Increasing concentrations of greenhouse gases in our atmosphere and oceans bode disastrous consequences: already we observe the impacts of sea level rise, weather extremes and widespread suffering caused by both trends. Fortunately, we still have options. Alternative fuels and advanced technologies, innovation hubs and entrepreneurs and—as this report emphasizes—new policy frameworks, given a chance, will drive change. What we do not have is the option of inaction: there is no Planet B.

The necessary transition to low-carbon and non-carbon energy sources has a number of short-term benefits: less air pollution, less chemicals, less mining and a greater range and dissemination of energy solutions. The cost of new alternatives is still often above that of traditional fossil technologies, however, and will remain so until the alternatives can be widely deployed. This is the core challenge we face today: for citizens around the globe, how do we raise the standard of living without raising the level of equivalent carbon dioxide (CO_2e)?

This challenge critically impacts the developing world, where 2 billion people have no access to electricity or clean water and struggle on less than two dollars a day. As a global society, we face a moral and ethical imperative to enable and support development. Yet, these countries simply cannot follow the blueprint of developed countries, relying on fossil fuels to power their economies and provide wealth. We cannot consume resources the way we have thus far without compromising our collective future. Developing countries have the opportunity to lead and set new standards of sustainable economic growth.

Untold Billions: Fossil-fuel subsidies, their impacts and the path to reform by the Global Subsidies Initiative (GSI) provides insights into how developing nations might do things differently and come out ahead by removing fossil-fuel subsidies.

As former President of Costa Rica, I know only too well the harm that energy subsidies can cause. The experience across Latin America shows that they lead to financial instability, stifle innovation by sending the wrong market signals, and prove difficult to remove, as the disruption can be great. In all cases, they can, and I believe should, be phased out.

In 1995, I enacted a law to remove fossil-fuel subsidies and introduced the first ever carbon tax. That tax funded farmers to protect and develop forests on private land, raising their income levels. In policy, as in science, I believe that there are clear governing principles, notably, *if you don't want more of something, then don't subsidize it*. On a finite globe, we don't want more fossil fuels, so we must stop subsidizing them.

Removing fossil-fuel subsidies will enhance the market for new energy solutions by making them more competitive, spurring innovation and development. This presents a great opportunity for entrepreneurs, technologists, scientists and business leaders. At the Carbon War Room, named after Churchill's famous World War II operations center, our mission is to harness entrepreneurial energy to power the transition to a post-carbon economy. From the deployment in East Africa of micro-generators invented in Silicon Valley, to the National Solar Initiative in India, we have numerous examples of innovation and low-carbon economic development evolving hand in hand.

We exist in a time of dire necessity, which nevertheless bodes well, as necessity is the mother of innovation. This instructive report by the GSI offers us a catalyst for that innovation.

J.M. Figueres
Chairman of the Board, Carbon War Room
Former President of Costa Rica

FOREWORD

Governments around the world spend significant sums of public money—many billions of dollars each year—subsidizing the consumption and production of fossil fuels. These subsidies have several key impacts: they lock economies into longer-term reliance on fossil fuels; they exacerbate greenhouse gas emissions by, in part, supporting inefficient energy use; they contribute to other forms of environmental pollution and land degradation; and they reduce investments available for cleaner energies, healthcare and education.

The fact is that subsidies designed to alleviate poverty all too often bypass the poor and benefit higher income groups, fossil-fuel companies and equipment makers. In short, such support mechanisms for fossil fuels run contrary to the urgent need for a low-carbon, resource-efficient, twenty-first century Green Economy.

Smart financial mechanisms, including short-term subsidies, can be advantageous if aimed at assisting a new and beneficial technology, process or market take-off. Fossil fuels do not fit this profile and are, indeed, far from it: they are part of a highly mature market whose impacts are now well known and should, in most circumstances, be able to compete without the public purse.

Phasing out fossil-fuel subsidies offers multiple opportunities for economies but is clearly not without practical and political challenges. Progress is happening: members of the G-20 and the Asia-Pacific Economic Cooperation (APEC) have recently committed to phasing out some fossil-fuel subsidies as part of a response to climate change and improved energy security. Indonesia, for example, is considering a phase-out date of 2014.

How to catalyze and embed this political process is now the question. Actions needed include public debate on the costs and benefits of subsidy reform in order to secure societal and political support, case studies to underline best practices and how to minimize any potential negative impacts on the poor and the vulnerable, and monitoring systems that will allow governments to track progress of subsidy reform.

The United Nations Environment Programme (UNEP) has for some time argued in favour of phasing down or phasing out fossil-fuel subsidies and is a collaborator with the Global Subsidies Initiative (GSI). *Untold Billions: Fossil-fuel subsidies, their impacts and the path to reform* is an important contribution to not only why, but how, that reform can be realized.

Governments are faced with many, often competing interests and challenges and are increasingly looking for answers and opportunities for fresh development paths. Reforming fossil-fuels subsidies—in particular, those that are the most inefficient and environmentally damaging—offers one way of realizing a more sustainable, Green Economic future that includes quick wins on climate change, a small but not insignificant boost to global and national GDP, and reduced dependence on a finite resource.

Achim Steiner
United Nations Under-Secretary General
and UNEP Executive Director

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INTRODUCTION

In recent decades, many countries have attempted to remove government support for the production or consumption of fossil fuels, with varying degrees of success. In late 2009 the leaders of both the Group of Twenty (G-20) countries and the Asia-Pacific Economic Cooperation (APEC) forum committed to phase out inefficient fossil-fuel subsidies. This will be easier said than done: subsidies are notoriously difficult to remove.

Untold Billions: Fossil-fuel subsidies, their impacts and the path to reform is a series of papers examining the extent of fossil-fuel subsidies, their impact on climate change and sustainable development more broadly, and the challenges to their reform. The aim of this project is to take the first and necessary steps toward a better understanding of the scope and role of fossil-fuel subsidies in the world economy. The reports provide a detailed overview, setting out what is currently known about subsidies to this sector and addressing key areas that need to be tackled in order for countries to undertake reform initiatives.

This paper presents two introductory forewords to the issue of fossil-fuel subsidy reform, the first by José María Figueres, Chairman of the Board, Carbon War Room, and Former President of Costa Rica, and the second by Achim Steiner, United Nations Under-Secretary General and UNEP Executive Director. It then summarizes the key messages from the five core research papers in the *Untold Billions* series:

- *Mapping the Characteristics of Producer Subsidies: A review of pilot country studies* (Koplow, Lin, Jung, Thoene & Lontoh, 2010)
- *The Effects of Fossil-Fuel Subsidy Reform: A review of modelling and empirical studies* (Ellis, 2010)
- *The Politics of Fossil-Fuel Subsidies* (Victor, 2009)
- *Strategies for Reforming Fossil-Fuel Subsidies: Practical lessons from three countries* (Laan, Beaton & Presta, 2010)
- *Gaining Traction: The importance of transparency in accelerating the reform of fossil-fuel subsidies* (Laan, 2010)

The papers explore in depth the issues and recommendations presented only briefly here. In each case, the full report can be freely downloaded from the GSI's website:
http://www.globalsubsidies.org/en/research/fossil-fuel-subsidies

I. MAPPING THE CHARACTERISTICS OF PRODUCER SUBSIDIES: A REVIEW OF PILOT COUNTRY STUDIES

by Doug Koplow, Cynthia Lin, Anna Jung, Michael Thoene and Lucky Lontoh

Recognizing that subsidy reform will not be possible without good data, this paper evaluates the state of information on fossil-fuel subsidies in a cross-section of countries that represent a range of governance systems, fossil-fuel markets and stages of economic growth. The investigation focuses on subsidies to producers of fossil fuels, which are often not well understood. Pilot studies have been completed for China, Germany, Indonesia and the United States using a matrix setting out the main subsidy types, the kinds of fuel they support and major national data sources about them. The report reviews these in order to lay the groundwork for characterizing the most important types of subsidies and key data sources, as well as summarizing data quality issues and important patterns or gaps in data availability. Initial findings reveal that:

- In **China**, information in some areas is relatively easy to obtain, such as prices and aggregate government revenues, and general tax rates at the central and provincial levels; however, disaggregated information in all these areas is lacking. Details on tax expenditure and exemption policies are not complete: the available information suggests there are hundreds of special tax exemptions and an important source of subsidies for the fossil-fuel industry. State-owned enterprises are politically powerful and relatively autonomous units, with a strong influence on shaping energy policy. China is a major player in global energy markets through its strategy of using foreign aid and trading functions to establish access to natural resources abroad. Additional de facto subsidies could arise through differential provincial enforcement of national regulations.
- **Germany** has national policies favouring broad disclosure of direct subsidies to industries, as well as strict state aid control rules within the European Union that govern transparency. Tax expenditures are reported using an outdated definition that leaves out important policies. Information on the scope or magnitude of support at the municipal level was more complicated due to the number of municipalities and inconsistent reporting procedures. Mineral resources are publicly owned and not tendered by auction, though firms must apply and meet strict conditions for operations and site closure. Sub-national governments have leeway on royalty rates charged. Germany also offers reduced energy-tax rates to specific activities and sectors. These may prove difficult to quantify, as they need to be evaluated in conjunction with the European Emission Trading System (ETS). Within the ETS, initial emission rights were granted for free instead of being auctioned leading to potentially large and difficult to quantify windfall profits.
- **Indonesia** is a significant producer of coal, oil and natural gas, with the government controlling the management of all energy resources. Government intervention in most segments of Indonesia's fossil-fuel sector is high, often resulting in state-owned enterprises (SOEs) being forced to sell fossil-fuel products at below-market prices to targeted domestic customers. Indonesian commitments to increase transparency in the energy sector and reduce corruption have not been matched by improvements on the ground. Royalties and related resource payments continue to lack transparency. Subsidies provided through production-sharing contracts may be a primary data gap in Indonesian fossil-fuel markets given the lack of transparency of terms provided to foreign companies. Increased use of coal is also supported by the government and may receive increasing subsidies.
- The **United States** is an important test case for the idea that price-gap evaluations alone are not sufficient to capture the many ways that fossil energy is subsidized. Some data exist on most types of fossil-fuel subsidies. From an international perspective, visibility of information is relatively good due to an array of federal laws requiring the reporting of many forms of financial support, including tax breaks and credit subsidies. Important gaps remain, however. At the federal level, required information about tax expenditures, credit and insurance support is often reported as multi-industry aggregates, making attribution to specific sectors difficult. Tax revenue estimation models are also not public, so estimates of the accuracy of tax revenue cannot be validated. Data on state or municipal subsidies are markedly worse for nearly all subsidy types.

The study also synthesizes the main findings from the four country studies, discusses cross-cutting trends in terms of data availability for fossil-fuel subsidies, forecasts some of the emerging issues that are likely to become more prominent over time, and includes a set of policy recommendations to improve the availability of data and information going forward.

II. THE EFFECTS OF FOSSIL-FUEL SUBSIDY REFORM: A REVIEW OF MODELLING AND EMPIRICAL STUDIES

by Jennifer Ellis

This paper reviews the literature on fossil-fuel subsidy reform in order to establish what common conclusions can be drawn about its economic, environmental and social impacts and to identify where further research is needed. It focuses on six major multi-country, multi-fuel studies undertaken since the early 1990s, each of which has assessed the economic and environmental impacts of reform at a global level (Burniaux, Martin & Oliveira-Martins, 1992; Larsen & Shah, 1992; IEA, 1999; OECD, 2000; Saunders & Schneider, 2000; and Burniaux et al., 2009). Some of these studies also assessed the social impacts of reform, as did most of the single-country studies reviewed.

- **Economic impacts**
  All six of the major studies found that reform would result in aggregate increases in GDP in both OECD (Organisation for Economic Co-operation and Development) and non-OECD countries, although predictions of how large this increase would be varied significantly, from 0.1 per cent in total by 2010 to 0.7 per cent per year to 2050. Those that broke down results into OECD and non-OECD blocks of countries predicted similar GDP increases for both groups (less than 1 per cent difference), although in the most recent study (Burniaux et al., 2009), this aggregation masks some significant GDP or real-income declines in some non-OECD countries. These conclusions were generally supported by single-country modelled and empirical results.
- **Environmental impacts**
  All six of the major studies concluded that reform would lead to reductions in CO_2 emissions, although predictions of the magnitude of reductions varied significantly, from 1.1 per cent by 2010 to 18 per cent by 2050. Because all six studies estimated the current scale of fossil-fuel subsidies using a method that produces a conservative estimate—the "price-gap approach" (Koplow, 2009)—all are likely to have under-predicted the true scale of achievable reductions. Extending the analysis to more countries and other fossil-fuel subsidies (notably producer subsidies) would also be likely to increase estimates of emissions reductions. Little work has been done to assess other environmental impacts, such as local air or water pollution, or demand for water or land.
- **Social impacts**
  The six major studies concluded very little from a social-impact perspective, although they generally suggested on a qualitative basis that the impact of reform on the poorest would likely be neutral or positive. A considerable body of work advanced by the World Bank and others, however, generally concludes that fossil-fuel subsidy reform would be associated with negative social impacts, but that these impacts could potentially be offset by re-targeting some of the saved subsidy expenditure toward social programs. As there can be significant challenges in establishing the necessary administrative mechanisms for delivering assistance to the poor, more research in this area would be beneficial.

The review concludes that further research could also be conducted on producer subsidies, demand and supply elasticities for fossil fuels and methods for more effectively incorporating social-impact analysis and environmental policies into general-equilibrium models. Consistent definitions of key variables and standards for reporting results could also make it easier to compare different studies on reform. Despite the fact that further research can and should be undertaken, the analysis strongly supports the conclusion that there are significant environmental and economic benefits that would result from the reform of fossil-fuel subsidies and that it should be considered a key element of a larger overall package for global climate change mitigation.

III. THE POLITICS OF FOSSIL-FUEL SUBSIDIES

by David Victor

This paper argues that the failure to fully reform subsidies lies in a failure to appreciate the politics behind such policies. Channelling resources to interest groups can be a tool to promote government survival, such as by influencing voting decisions or donations to political campaigns. Once subsidies have been created, the groups who benefit are usually well organized and poised to block reform. This paper reviews these fundamental political forces and examines which factors determine the demand for and supply of subsidies.

It concludes that although the demand from interest groups can explain why some subsidies are created, it does not explain why subsidies are supplied in so many different forms. The central problem actually lies with supply: a subsidy is a readily available mechanism for governments or their agents (such as state oil companies) and requires very little administrative capability. Moreover, subsidies are a highly visible policy to supply goods and services to populations, offering even non-elected governments a way to make populations less prone to unrest. The logic of supply can also help explain why overt subsidies seem to concentrate on consumers rather than producers, as there are often more effective and less visible ways for producer groups to seek support. Finally, a government is not a unitary actor—the part of government setting a subsidy policy may have little control over the part of government that could implement a more effective social policy.

The study suggests four lessons for reformers:

1. **Reform must begin with an appreciation of the political logic that led to the subsidy's creation.** This allows strategies to be designed that can compensate powerful interests or find ways to inoculate policy reforms against potential opposition.
2. **An effective political strategy for subsidy reform usually benefits from transparency in the cost and purpose of the subsidy.** Many subsidies—especially the indirect, covert subsidies that appear to be particularly large and pernicious—survive because the parties are unaware of the costs they are paying and because opacity makes it difficult to pursue an informed debate over the subsidy's legitimate purposes.
3. Where subsidies are unavoidable—either because they are rooted in an unwavering political calculus or they serve legitimate public purposes—then **better subsidy design can usually help reduce any negative effects and also ease the task of reform in the future.** This includes:
   - the creation of subsidies with credible "sunset clauses" that ensure they are phased out in the long term;
   - pre-announced conditions to adjust the subsidy as market conditions change, preventing them from becoming unsustainable burdens on national budgets;
   - explicit, transparent mechanisms for the adjustment of subsidies, making it easier for investors to predict market circumstances and facilitating debate about conditions for continuing the subsidy; and
   - the utilization of performance targeting, ensuring the subsidy is focused on achieving its intended purpose.
4. **Subsidy reformers can have more success when governments have better administrative tools in their arsenals.** Broad-spectrum subsidies are blunt instruments that are nonetheless popular because governments often have few choices, and the path dependence evident in their use makes it additionally difficult for a government to invest in alternative administrative tools once a subsidy scheme has been established.

IV. STRATEGIES FOR REFORMING FOSSIL-FUEL SUBSIDIES: PRACTICAL LESSONS FROM THREE COUNTRIES

by Tara Laan, Christopher Beaton and Bertille Presta

This paper analyzes the experiences of countries that have undertaken reform of their fossil-fuel subsidies and establishes what lessons can be learned. It focuses in particular on France, Ghana and Senegal, as well as drawing from case studies of other countries[1] and previous work that examines the reform of energy subsidies and price subsidies.

The paper finds that, once in place, fossil-fuel subsidies are extremely difficult to remove. There is no single formula for success, and country circumstances and changing global conditions must be taken into account; however, strategies can be identified that contribute to successful reform and respond to individual country circumstances. There are six important strategies that appear to improve the chances of lasting change:

1. **Research:** Early research to quantify the subsidy, to assess how its costs and benefits are distributed and to estimate the likely effects of its removal (both direct and indirect) helps in the drawing up of a comprehensive strategy for reform. In some cases, the findings may be perceived as having added legitimacy if the research is conducted by independent institutions or international organizations. This is also an opportunity to identify stakeholders and take into account their concerns about reform.
2. **Establishment of reform objectives and parameters:** Fossil-fuel subsidies might be reformed for many reasons, including climate change mitigation, increasing energy efficiency or security, reducing expenditure or complying with international agreements such as World Trade Organization (WTO) obligations. The clear articulation of objectives helps focus the reform strategy on the highest priorities for de-subsidization and facilitates the development of appropriate support policies.
3. **Construction of a coherent reform policy:** A coherent reform policy is ideally designed with support from a broad range of stakeholders. It establishes a timeframe for implementation, includes complementary policies that offset any undesired secondary impacts (such as welfare support for the poor, programs to help industries restructure or longer-term strategies to diversify the national energy supply), develops a communications strategy to assure stakeholders that their interests are being respected, and creates mechanisms to ensure transparency regarding subsidies and the reform process.
4. **Implementation:** Reform is not easy and may require several attempts. Implementation may sometimes be postponed, or successful reforms reversed, due to dramatic changes in world fuel prices.
5. **Monitoring, evaluation and adjustment:** The best policies are those that can be adapted in light of new information (Walker, Rahman & Cave, 2001, pp. 282-289). This requires a continual assessment of the underlying objectives of the policy as circumstances change. By maintaining a focus on desired outcomes, policies are more likely to be adapted in ways that support their original purposes.
6. **Forward movement:** The major challenge following successful reform is the prevention of backsliding. By making pricing decisions the function of an independent body and by automatically linking domestic and international prices, governments can reduce the pressure to become enmeshed in fuel-price issues in the future. Any reform strategy will only be as robust as the political will to uphold it, however.

[1] The paper takes into account findings from four companion case studies developed under IISD's Trade and Climate Change Initiative, which observes fossil-fuel subsidy reform in Brazil (de Oliveira, forthcoming), India (Shenoy, 2010), Indonesia (Lontoh, forthcoming) and Poland (Suwala, 2010).

V. GAINING TRACTION: THE IMPORTANCE OF TRANSPARENCY IN ACCELERATING THE REFORM OF FOSSIL-FUEL SUBSIDIES

by Tara Laan

In the context of public policy, transparency refers to the openness and accountability of governments, particularly regarding expenditure and decision-making. This paper addresses the role that increased transparency could play in fossil-fuel subsidy reform and specifically asks what information is needed to support the G-20 and APEC calls for reform and what mechanisms can ensure that transparency is produced in an accurate and timely manner.

A necessary first step for reform is to develop an accurate picture of the level and nature of subsidization. Reliable information facilitates an assessment of the subsidy's costs, distribution and impacts and the development of effective strategies for reform. At the international level, it provides a foundation for dialogue on reform and for monitoring of progress toward de-subsidization. But the current state of knowledge about fossil-fuel subsidies is less than desirable. There are major differences in the amount and quality of information among countries and types of subsidies. At the international level, the lack of information is partly the result of the absence of a system or protocol to comprehensively assess and monitor fossil-fuel subsidies.

Drawing on existing literature regarding transparency in public policy, this paper describes how improved information could most usefully support reform and how this can be achieved given available time and resources. An analysis of previous efforts to improve transparency about subsidies—in energy and other sectors—is used to suggest options for a feasible international system for evaluating and reporting fossil-fuel subsidies. The paper concludes that improving transparency requires a two-track approach: better reporting within countries and a new international regime.

- **Domestic action: Better accounting and reporting**
  One reason that governments are often non-transparent about fossil-fuel subsidies is that they simply do not know the full extent of subsidies offered in their jurisdiction. Improved national-level reporting, based on internationally consistent estimation methods and subsidy-accounting standards, would help countries better manage public spending. It would also facilitate compilation, aggregation and comparison of data across countries. Tracking subsidies is technically demanding and resource consuming and therefore some countries might require expert assistance in the early stages of this process.
- **International action: A new data gathering and management regime**
  An international regime is also needed to gather data across multiple countries. In its operation, such a regime could facilitate data-gathering through a standard reporting template and guidelines that specify the scope of support to be included and standard methods for documenting subsidies. The secretariat of an intergovernmental organization could also perform detailed country studies in collaboration with national governments, using recognized subsidy-accounting frameworks. Several existing international institutions could implement such a regime. Identifying the contribution that these organizations could make is important, but ultimately their roles and responsibilities will be determined by governments and available resources.

Overall, such national and international efforts would build a comprehensive picture of fossil-fuel subsidies over several years, providing a firm basis for assessing their impacts, developing reform strategies and monitoring progress.

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THE GLOBAL SUBSIDIES INITIATIVE (GSI) OF THE INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT (IISD)

The International Institute for Sustainable Development (IISD) launched the Global Subsidies Initiative (GSI) in December 2005 to put a spotlight on subsidies—transfers of public money to private interests—and how they undermine efforts to put the world economy on a path toward sustainable development.

Subsidies are powerful instruments. They can play a legitimate role in securing public goods that would otherwise remain beyond reach. But they can also be easily subverted. The interests of lobbyists and the electoral ambitions of officeholders can hijack public policy. Therefore, the GSI starts from the premise that full transparency and public accountability for the stated aims of public expenditure must be the cornerstones of any subsidy program.

But the case for scrutiny goes further. Even when subsidies are legitimate instruments of public policy, their efficacy—their fitness for purpose—must still be demonstrated. All too often, the unintended and unforeseen consequences of poorly designed subsidies overwhelm the benefits claimed for these programs. Meanwhile, the citizens who foot the bills remain in the dark.

When subsidies are the principal cause of the perpetuation of a fundamentally unfair trading system, and lie at the root of serious environmental degradation, the questions have to be asked: Is this how taxpayers want their money spent? And should they, through their taxes, support such counterproductive outcomes?

Eliminating harmful subsidies would free up scarce funds to support more worthy causes. The GSI's challenge to those who advocate creating or maintaining particular subsidies is that they should be able to demonstrate that the subsidies are environmentally, socially and economically sustainable—and that they do not undermine the development chances of some of the poorest producers in the world.

To encourage this, the GSI, in cooperation with a growing international network of research and media partners, seeks to lay bare just what good or harm public subsidies are doing; to encourage public debate and awareness of the options that are available; and to help provide policy-makers with the tools they need to secure sustainable outcomes for our societies and our planet.

www.globalsubsidies.org

The GSI is an initiative of the International Institute for Sustainable Development (IISD). Established in 1990, the IISD is a Canadian-based not-for-profit organization with a diverse team of more than 150 people located in more than 30 countries. The GSI is headquartered in Geneva, Switzerland and works with partners located around the world. Its principal funders have included the governments of Denmark, the Netherlands, New Zealand, Norway, Sweden and the United Kingdom. The William and Flora Hewlett Foundation has also contributed to funding GSI research and communications activities.

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