

Fukushima Nuclear Accident and Critical Accounting Studies

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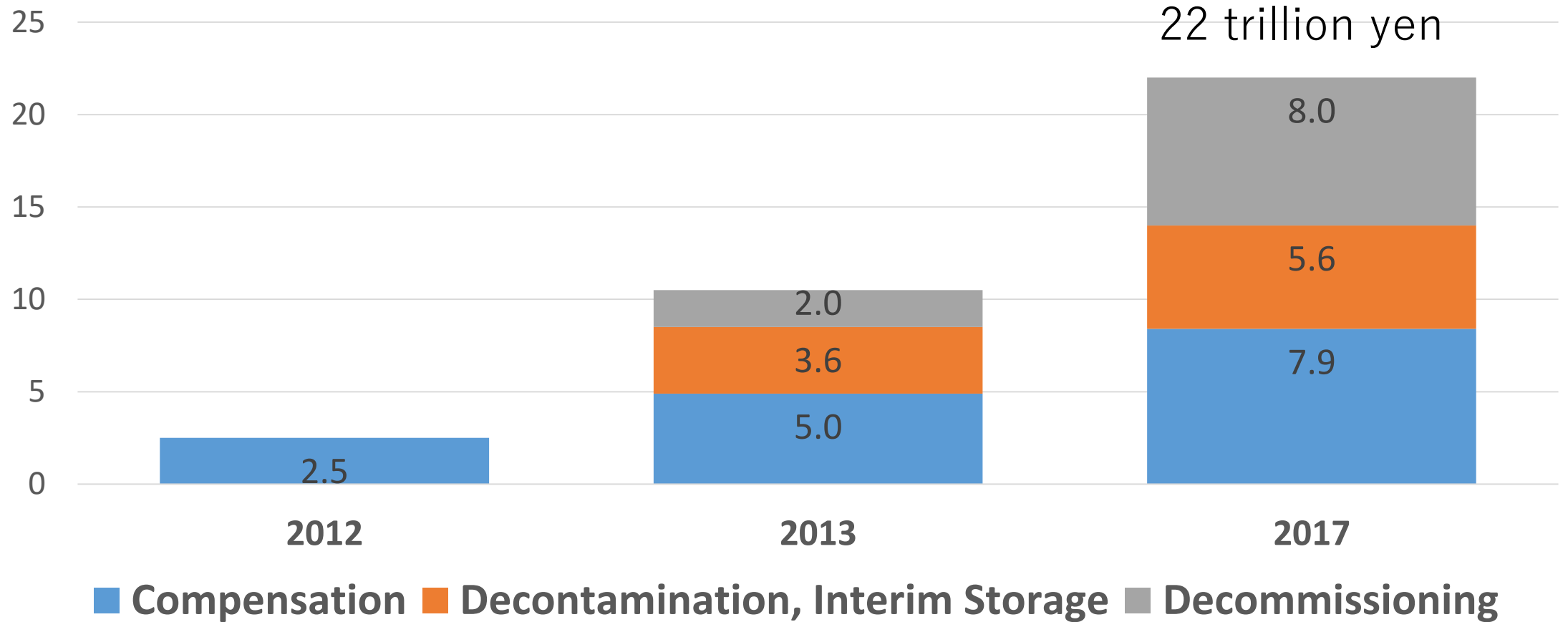
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- Research Findings
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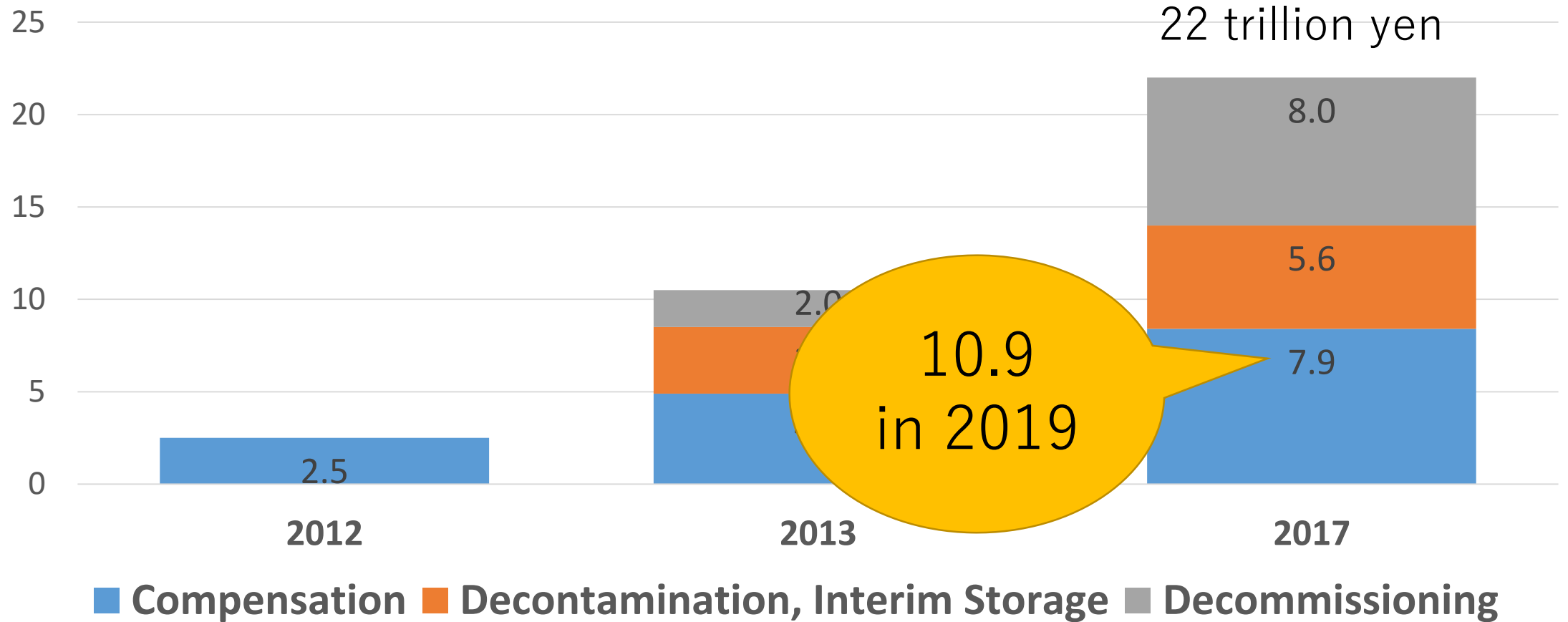
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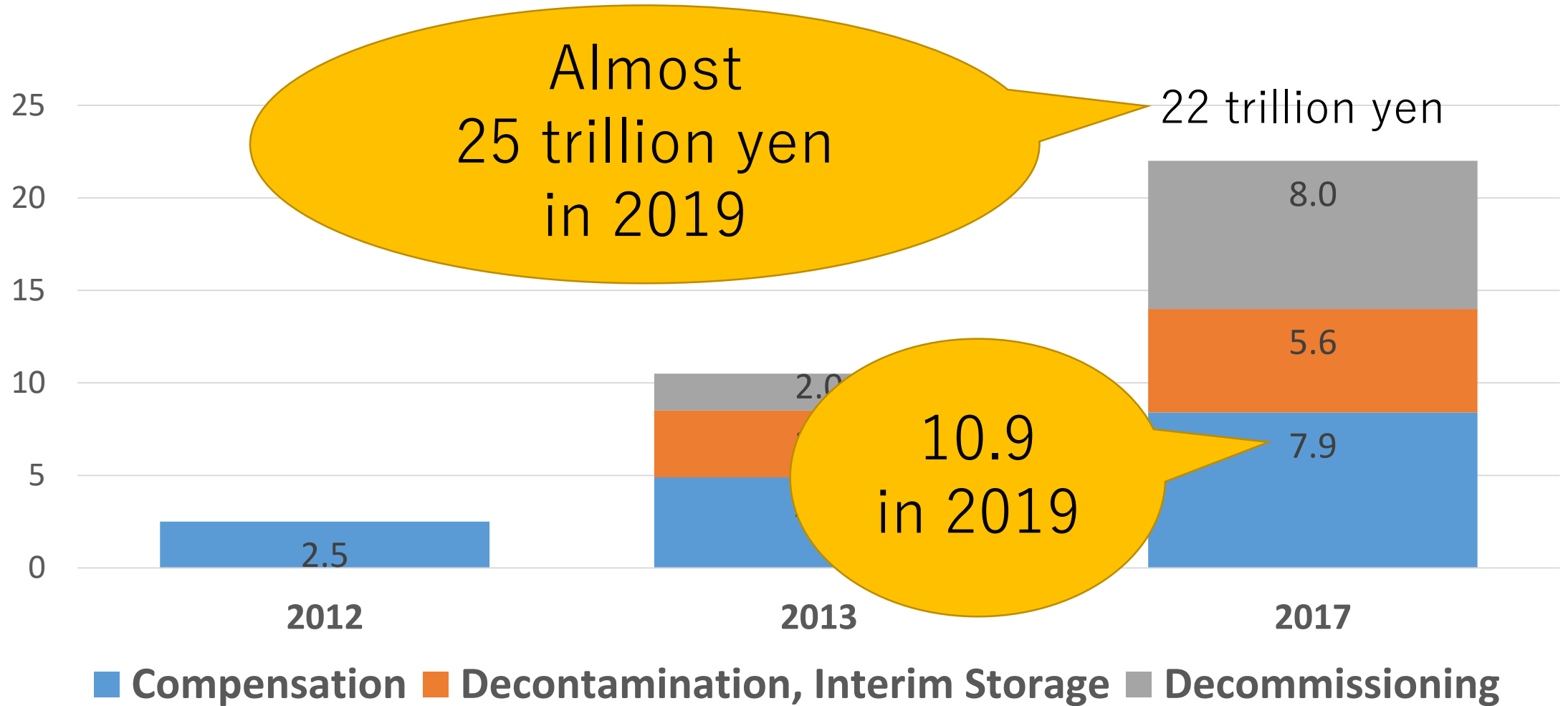
The Official Estimation of Fukushima Costs



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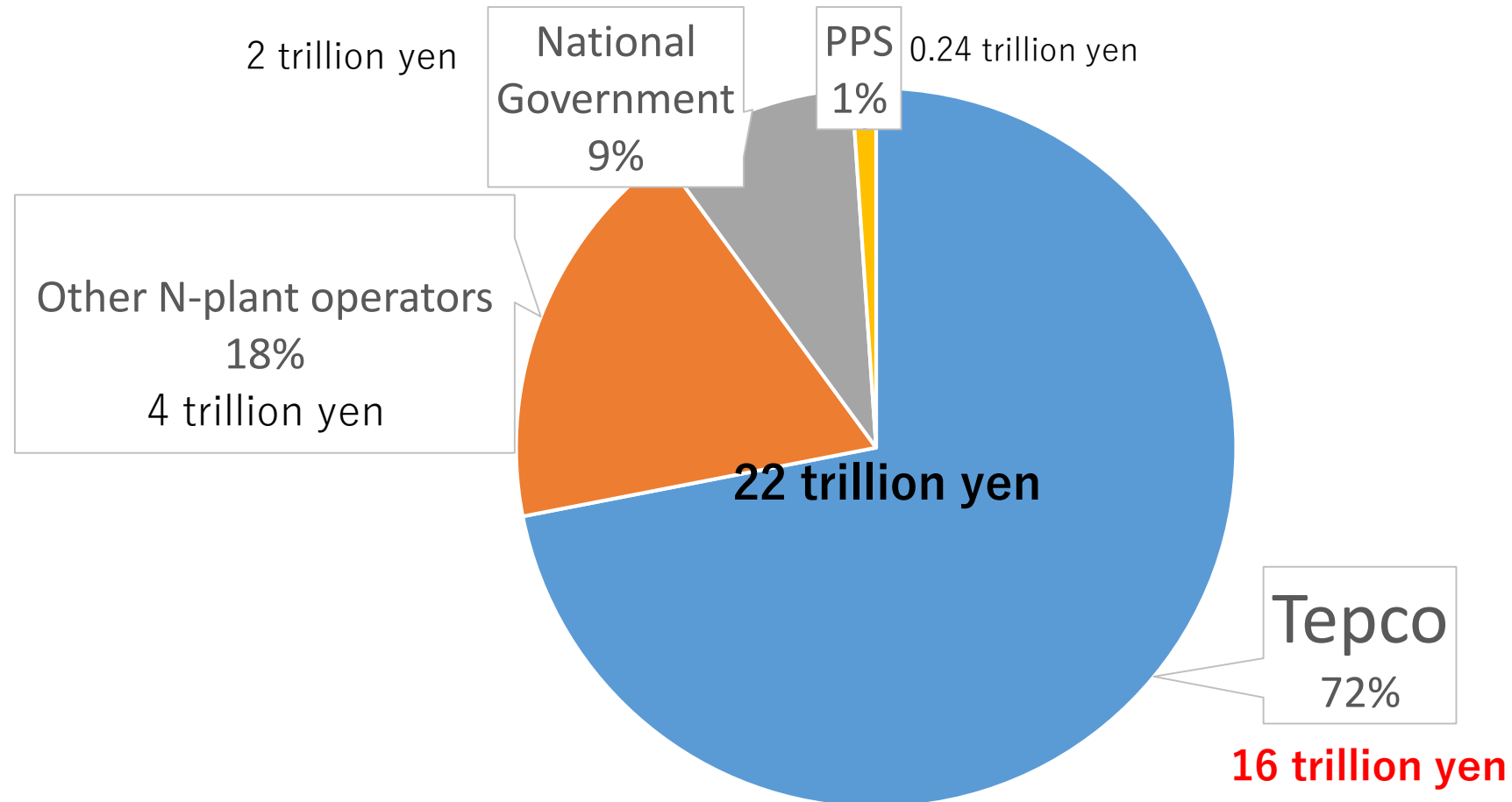


Cost breakdown and parties responsible for payment (as of December 2016)

		Tepco		Other N-plant operators		PPS		National government
Damage compensation, 8 trillion yen	=	4 trillion yen	+	4 trillion yen	+	240 billion yen		
Decontamination and interim storage, 6 trillion yen	=	4 trillion yen					+	2 trillion yen
Decommissioning, 8 trillion yen	=	8 trillion yen						

Source: Excerpted from METI (2016), p. 21.

Breakdown of payment obligations associated with Fukushima costs



Source: Prepared by author with data from the previous slide

Tepco balance sheet for the year ended March 2019 (summary, unit: 1 trillion yen)

Tepco balance sheet for the year ended March 2019 (summary, unit: 1 trillion yen)

Fixed Assets		10.3	Long-term liabilities		5.2
Electric utility fixed assets	6.6		Bonds	1.3	
Hydroelectric power generation facilities	0.3		Long-term loans	1.3	
Thermal power generation facilities	1.0		Other long-term liabilities	2.5	
Nuclear power generation facilities	0.8		Current liabilities		4.6
Transmission facilities	1.5		Reserve		0
Transformation facilities	0.6		Total liabilities		9.9
Distribution facilities	2.0		Shareholders' equity		2.6
General facilities and others	0.1		Capital stock	1.4	
Facilities in progress	0.9		Capital surplus	0.7	
Nuclear fuel	0.6		Earned surplus	0.5	
Other fixed assets, etc.	2.1		Treasury stock	0	
			Accumulated other comprehensive income		0
Current Assets		2.2	Non-controlling shareholders' interests		0
			Total net asset		2.6
Total Assets		12.5	Total of liabilities and net asset		12.5

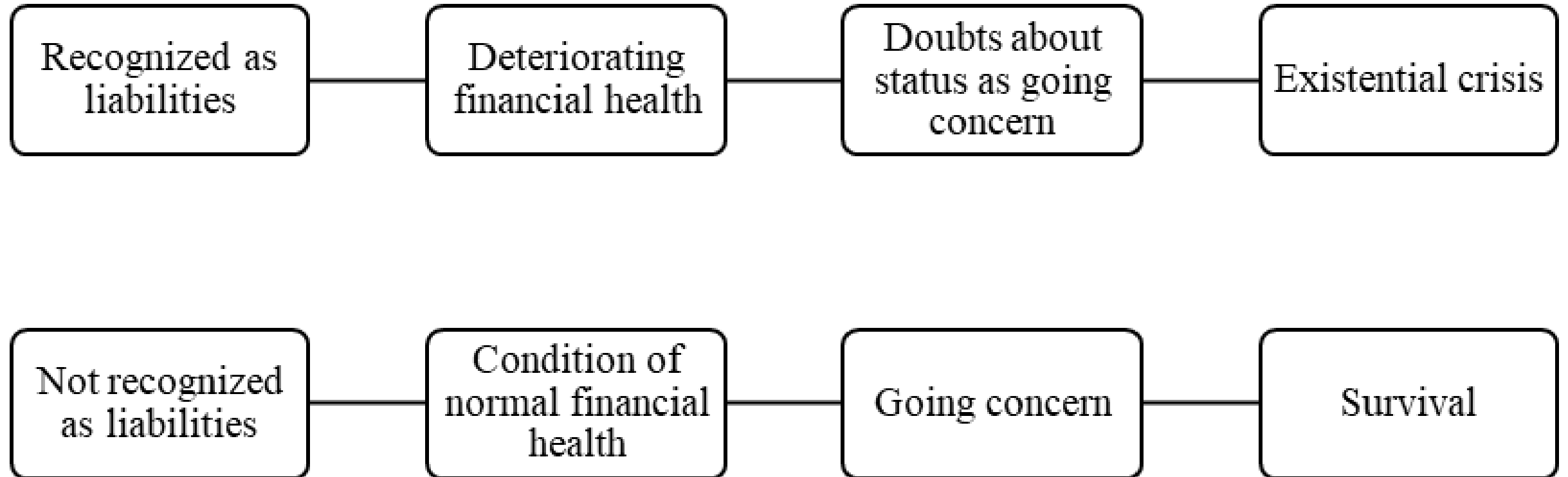
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Hydroelectric power				1.3	
Thermal power				2.5	
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Transmission lines				0	9.9
Transformation equipment					
Distribution equipment					2.6
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The 16 trillion yen liability has not been accounted for on its balance sheet.

The treatment of nuclear accident costs as liabilities and survival as a going concern



METI(2016) “Tepco Reform Recommendation”

- Tepco was allowed to survive so that it could **fulfill its responsibility** to Fukushima. (p.2)
- Tepco is expected **to fulfill its obligations by generating funds** through its own management reform for payments of decommissioning and compensation. (p.2)
- The Tepco reform presented in this recommendation is aimed at **streamlining costs and increasing profits in order to fulfill its responsibility** to Fukushima (p. 6).
- The philosophy of economic business is “**to fulfill our responsibility to Fukushima by winning in the global market**” (p.9)
- “The Fukushima business is the origin of Tepco's survival, and the **economic business is the foundation of responsibility for Fukushima**” (p.12)

Tepco's responsibility =
Tepco's economical success

Tepco & NDF(2017)

The 3rd Special Business Plan

- In this business plan, attention will be focused on how Tepco will in the future develop the **fiscal resources to repay the government** for the subsidies it has utilized to date for payments of its enormous damage compensation obligations and other expenditures. (p.2)
- The conclusion is that Tepco will generate those repayment resources by carrying through with periodic measures in management reform and **boosting its corporate value** on that basis (p.2)

Two targets (METI, 2016, p.24)(Tepco & NDF, 2017, p.6)

- **First**, Tepco plans to secure annual payments of **200 billion yen** toward its 4 trillion yen share of damage compensation costs **as well as an annual 300 billion yen** toward its 8 trillion yen share of the decommissioning costs, **both over a 30-year timespan**.
- **Second**, to finance the payment of its 4 trillion yen share of the decontamination costs, Tepco intends to generate 4 trillion yen in proceeds from the sale of shares currently worth 1 trillion yen and secure **income growth of 450 billion yen per annum**.

Three Steps (METI, 2016, p.24)(Tepco & NDF, 2017, p.6)

- **1st Step: Cost reductions** Tepco plans to raise more than 500 billion yen annually by reducing its power transmission costs, by improving its fuel procurement structure and by implementing shorter intervals between its periodic inspections of power generating facilities.
- **2nd Step: Restart of Kashiwazaki-Kariwa nuclear power plant** to make 100 billion yen.
- **3rd Step: Joint business ventures in domestic and international marketplace.** Tepco will boost its corporate value by a factor of five by establishing joint business ventures with other companies in the power transmission and nuclear power sectors, by reinforcing its business foundations as well as its global competitiveness, and by improving its status in the international marketplace.

Step 1

Reforms in unconsolidated costs, for 500 billion yen per annum



Step 2

Restarting Kashiwazaki-kariwa nuclear power plant, for 100 billion yen per annum



Step 3

Joint cost reforms, joint development, and penetration into overseas markets, for cost reductions and revenue gains totaling 450 billion yen per annum



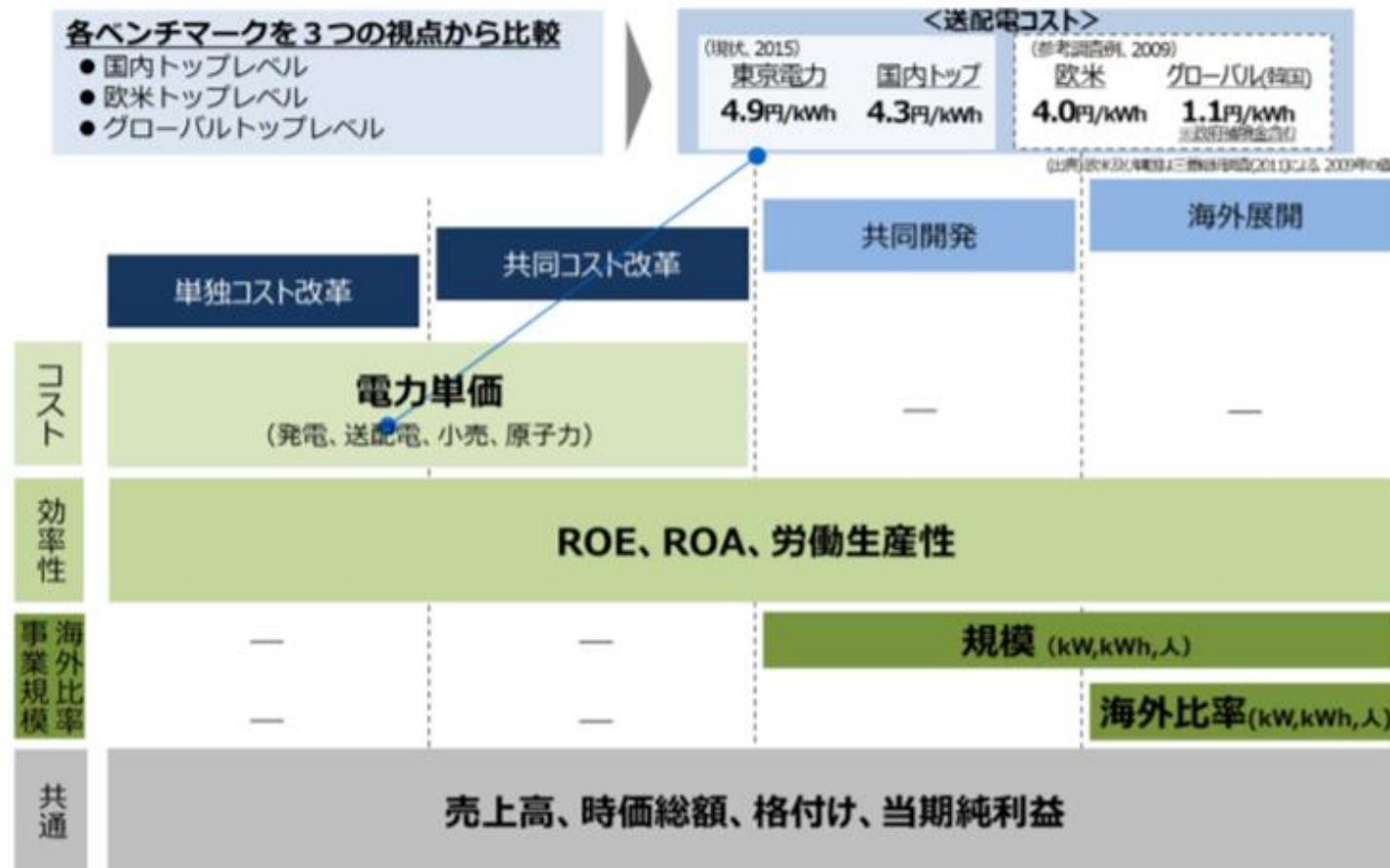
(1) Increased revenue of 500 billion yen per annum
(2) five-fold increase in corporate value

Two targets

Three steps

“Benchmarks linked with responsibility”

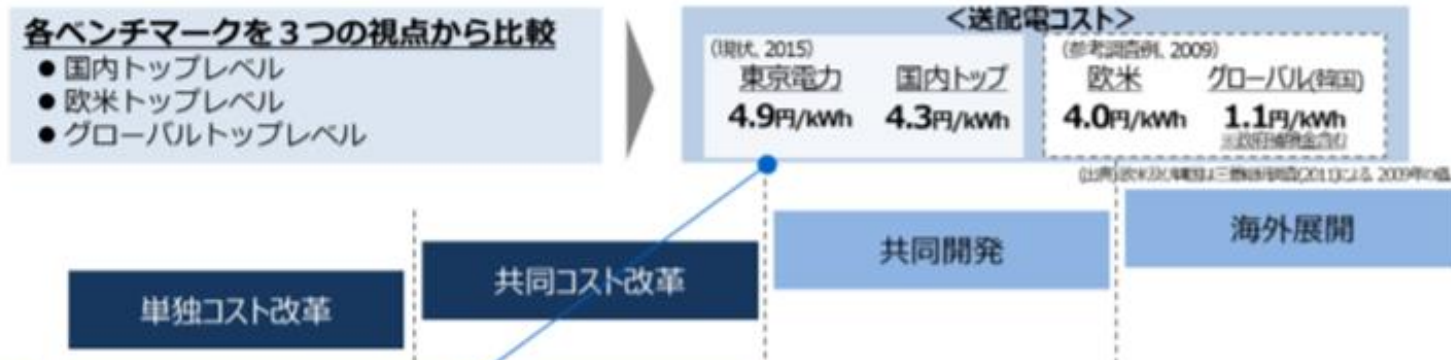
【参考9】責任とリンクしたベンチマーク（BM）



(注) 「託送原価単価」について、東電及び国内トップは2015年度の送配電部門営業費用から電源開発促進税、原子力バックエンド費用を除いたものをエリア需要で除したものを。国内と海外の比較にあたっては、託送の定義や地理的状況、送電の質（停電の回数、時間）といった算定の前提等が異なるため、単純比較はできない点に留意が必要。

Benchmarks linked with responsibility

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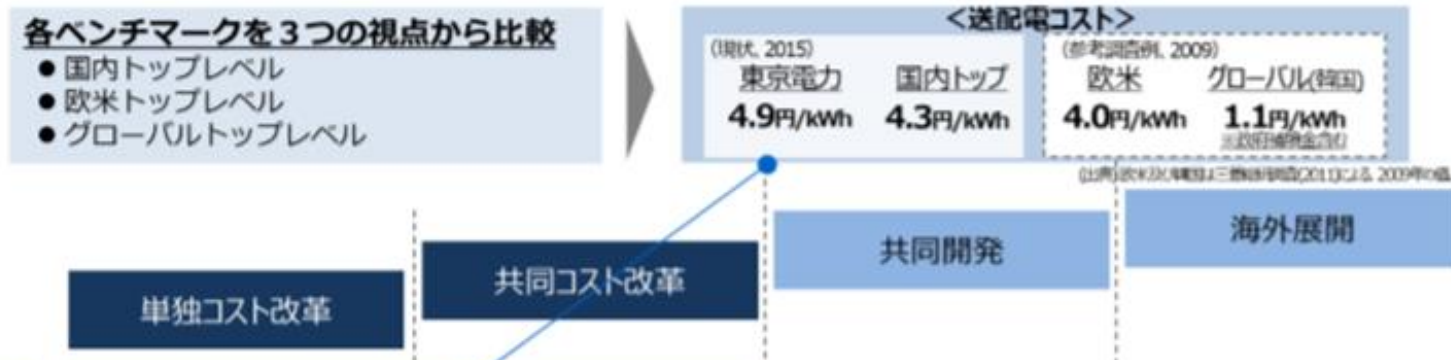
Cost
(power generation, transmission and transformation, distribution, and nuclear)

効率性	ROE、ROA、労働生産性			
海外事業規模	—	—	規模 (kW, kWh, 人)	海外比率 (kW, kWh, 人)
共通	売上高、時価総額、格付け、当期純利益			

(注) 「託送原価単価」について、東電及び国内トップは2015年度の送配電部門営業費用から電源開発促進税、原子力バックエンド費用を除いたものをエリア需要で除したものを。国内と海外の比較にあたっては、託送の定義や地理的状況、送電の質（停電の回数、時間）といった算定の前提等が異なるため、単純比較はできない点に留意が必要。

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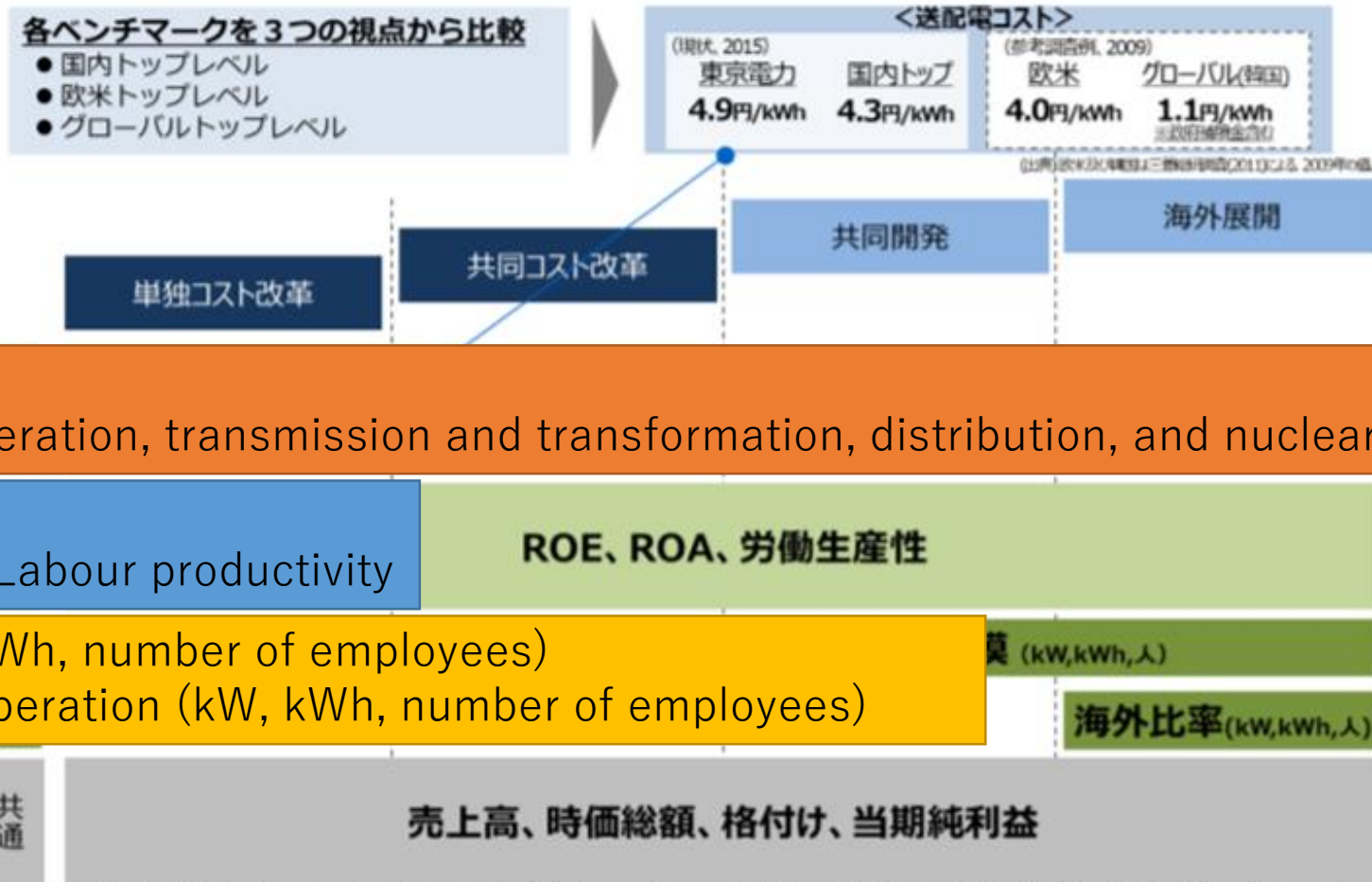
Efficiency
ROE, ROA, Labor productivity

		ROE、ROA、労働生産性	
事業規模	—	—	規模 (kW, kWh, 人)
海外比率	—	—	海外比率 (kW, kWh, 人)
共通	売上高、時価総額、格付け、当期純利益		

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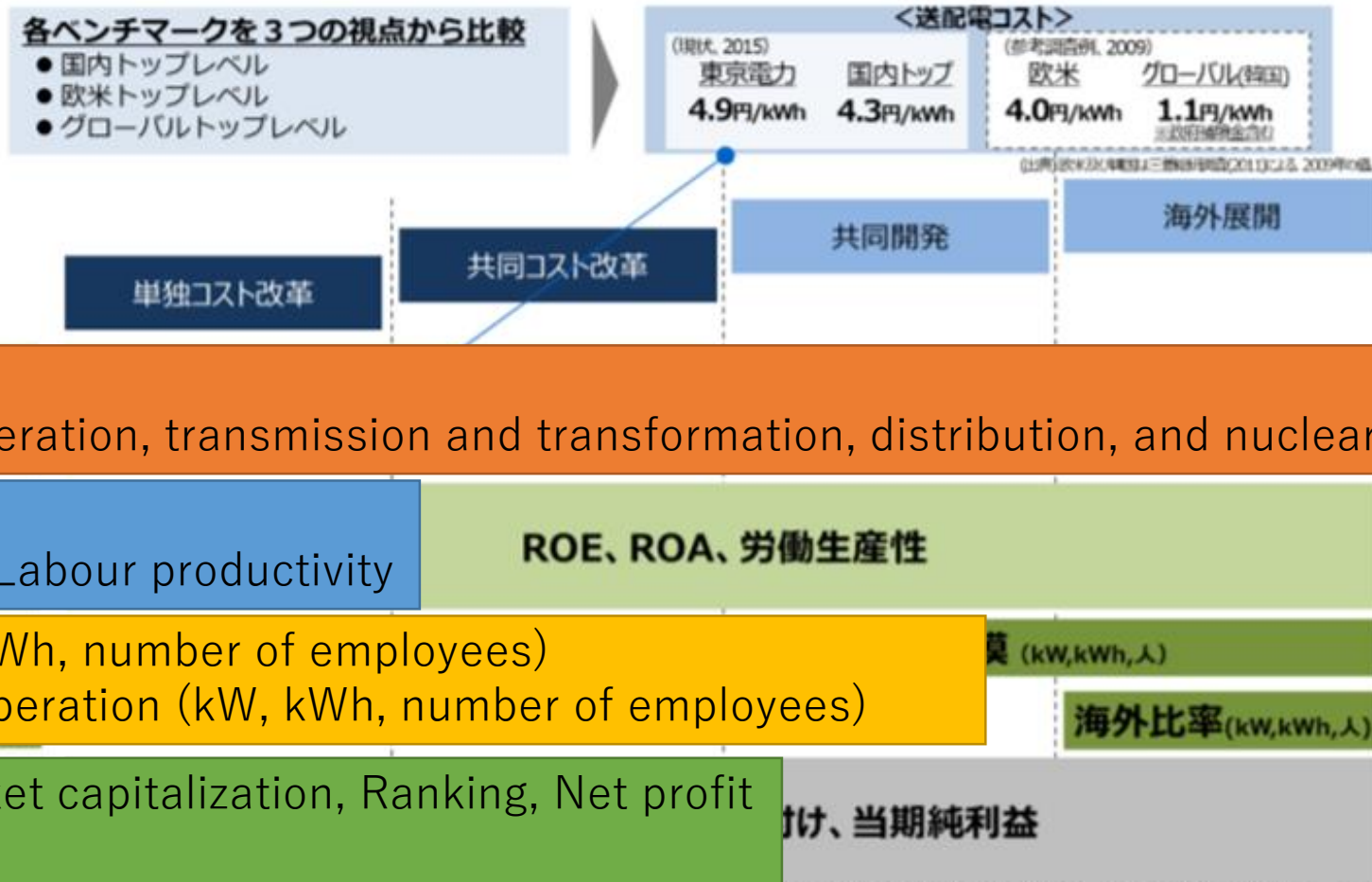
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The structure of Tepco's fulfilment of its responsibility

Responsibility to Fukushima

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graph TD; A[Responsibility to Fukushima] --> B[Boost in its corporate value]; B --> C[Two Targets]; C --> D[Three Steps]; D --> E[Many benchmarks];
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Boost in its corporate value

Two Targets

Three Steps

Many benchmarks

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Sociological Approaches to the Study of Quantification

- There has been a corresponding increase in **social science scholarship on quantification**, which, dispersed among many fields, investigates themes such as governance by numbers, performance measures, and the relationship between valuation and quantification in sociology and related disciplines, including anthropology, socio-legal studies, public administration, science and technology studies, and accounting. (Mennicken and Espeland, 2019: 224)

- The French school of quantification was launched by **Alain Desrosières** and a group of like-minded researchers, including **Laurent Thévenot**, **Robert Salais** (at the French National Institute of Statistics and Economic Studies: INSEE) and the sociologist **Luc Boltanski**.
- Today, **the French school is central** in studies of relations between quantification and valuation, and measure and worth. (Mennicken and Espeland, 2019, 226)

- Other scholars, many with backgrounds in the history and philosophy of science and ties to **North America and Germany**, were working on the production and influence of statistics at roughly the same time.
- In 1982, an international group in Bielefeld, Germany, launched a series of important studies of probability and statistics, including those works by **Lorenz Krüger, Ian Hacking, Lorraine Daston, Theodore M Porter and Gerd Gigerenzer**. (Mennicken and Espeland, 2019, 226)

- **Critical Accounting studies** form another important center of quantification scholarship.
- Beginning in the **United Kingdom** in the 1970s, a group of accounting scholars led by **Anthony Hopwood**, a professor of accounting and highly accomplished institution-builder, challenged the view of accounting as a technical, objective enterprise, insisting instead that the sociological, organizational, and social-psychological dimensions of accounting practice were crucial for understanding how accounting techniques are created and used. (Mennicken and Espeland, 2019, 226-227)

- Influential early work included **Peter Miller & Ted O'Leary**'s analysis of standardized costing as a mechanism of labor control at the turn of the twentieth century, and **Keith W. Hoskin & Richard H. Macve**'s work on the historical interrelationships between accounting and educational examinations.
- In 1997, **Michael Power** published his seminal book *The Audit Society: Rituals of Verification*. (Mennicken and Espeland, 2019, 227)

Power (1997)

- During the late 1980s and early 1990s, the word “audit” began to be used in Britain with growing frequency in a wide variety of contexts. A growing population of “auditees” began to experience a wave of formalized and detailed checking on what they do.
- The **audit explosion** contains many dangers and the concept of an **audit society** suggests the pathologicality of excessive checking (p.xii).
- Audit is an idea as much as it is a concrete technical practice.(p.4)
- **Trust** releases us from the need for checking (p.1).

Power (2007)

- **Risk** has ubiquitous and it seems as if we must take a risk-based description of everything. Evidence for this expansion in discourses of risk **and its management** is easily found in a policy, business, and regulatory literature explosion since the mid-1990s. (p.2)
- This book analyses this specific phenomenon, namely the abstraction, rationalization, and expansion of **risk management ideas** (p.3).
- The emergence of rational designs for risk management systems **reflects social, economic, and cultural influences** (p.4).

Miller and Power (2013)

- By **economizing**, we mean **the processes and practices through which individuals, activities, and organizations are constituted as economic actors and entities**, rather than the popular sense of reducing costs or making savings.
- **It is here that the role of accounting** (and accountants) **is decisive**.
- **Activities as diverse as manufacturing, healthcare, and education** are increasingly structured around estimates of financial returns, assessments of risk and performance, and a multitude of other **forms of financial representation**.

Kurunmäki, Mennicken and Miller (2016)

- **Economising** is of interest not just because it is performative, but because it is tied to **particular modes of governing**, particular modes of being.
- It implies **a concern with the idea of efficiency** – governing aimed at enhancing individual or collective performance, the reduction of wastefulness, and the imposition of rationing through calculation.
- Economising is further about making comparable things that are not yet comparable by distilling **different things into a single *financial* figure**.
- **Accounting has a special role to play here**. It represents a particular variant of economization that has received insufficient attention outside the discipline of accounting.

Quantification

Administration

Democratic rule

Economisation

Personal life

Mennicken & Espeland, 2019

Territorializing

Mediating

Adjudicating

Subjectivizing

Accounting

Miller & Power, 2013

Territorializing (Miller & Power, 2013)

- The calculative instruments of accountancy presuppose and recursively construct the **calculable spaces** that actors inhabit within organizations and society.
- This may be a matter of delineating particular **physical spaces**, such as a factory floor or a sub-area of it, an office, a hospital ward, or any other accounting unit.
- Or it may be a matter of defining a more **abstractly conceived space**, such as a department, a division, a particular cost center, and a group of users or customers.

Mediating (Miller & Power, 2013)

- Accounting is **a set of ideas**.
- Accounting **links up different actors with a common narrative** and may constitute a network of relations within and beyond the boundaries of the enterprise.

Adjudicating (Miller & Power, 2013)

- By this, we mean that a whole host of accounting practices exist to pronounce on and to **evaluate the performance** of individuals and organizations.
- Territorializing or Mediating is indissociable from the **allocation of responsibility**. In this respect, we contend that accounting plays a fundamental adjudicating role in modern organizations.

Subjectivizing (Miller & Power, 2013)

- Accounting is what we term a ***subjectivizing or individualizing*** practice in its effects, both within organizations and more generally.
- Individualism is a historically constructed social doctrine, one that is growing and that imposes **obligations on the individual to “perform”**. It is one of the core “conceits” of modern culture. Accounting is at the very heart of this enterprise of subjectivizing.

Mennicken (2013)

- Accounting and Privatisation in the **Prison Service** of England and Wales
- They led to a shift in emphasis **from the Prison Service as a whole to individual prison establishments.** (p.221)
- Notions of failure and failing came to be connected to **individual**, failing prison organizations, **rather than the prison system as a whole.** Attention has been deflected from issues concerning the roles of the prison in society, alternatives to imprisonment, and general criminal justice issues.(p.221)

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Research findings

- The sociological, organizational, and social-psychological dimensions of accounting practice have been investigated in **Critical Accounting Studies**.
- Within broader Sociological Approaches to the Study of Quantification, accounting plays crucial roles in the **Economization**.
- There are four particular aspects of the roles of accounting in economizing: **Territorializing, Mediating, Adjudicating and Subjectivizing**.
- Previous literature on economizing calls for greater attention to the roles of accounting numbers, because an **excessive use of accounting can “contain many dangers”**.

Economizing

Constituting individuals, activities, and organizations as economic actors and entities

structuring financial returns, assessments of risk and performance, and a multitude of other forms of financial representation

Economizing Tepco's responsibility to Fukushima

Keeping Tepco in business (by off-balancing 16 trillion yen liability)

Structuring the two targets, three steps and many benchmarks in its business plan

Territorializing

- By off-balancing 16 trillion yen liability, Tepco survived as a going concern, constructing the “calculable space”.

Mediating

- The idea was disseminated that Tepco can fulfill its responsibility to Fukushima by achieving the two financial targets (500 billion yen per annum and five-fold increase in corporate value).

Adjudicating

- The two financial targets are used to measure and evaluate Tepco’s responsibility and its achievement.

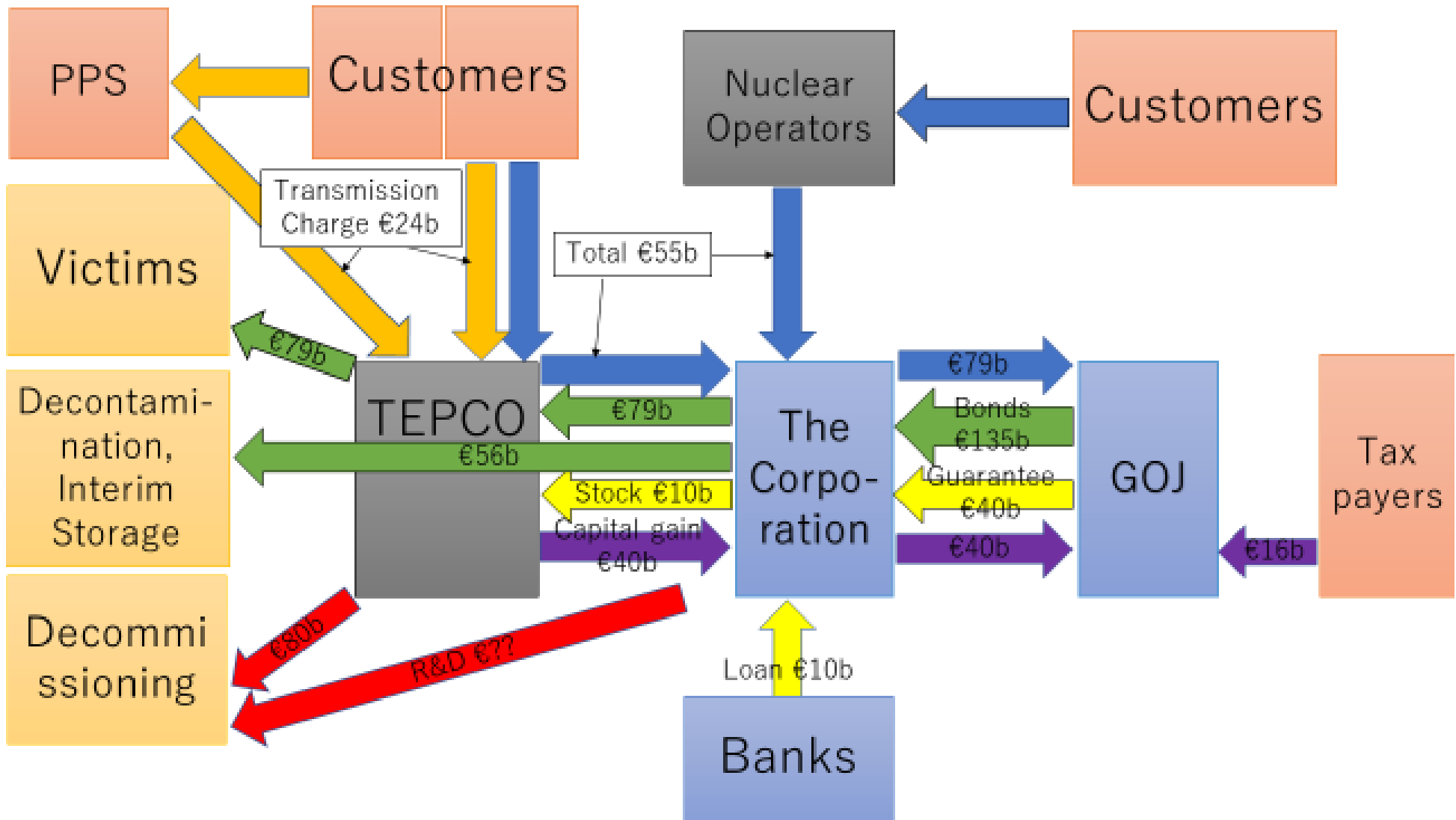
Subjectivizing

- The responsibility to Fukushima came to be connected to individual organizations, rather than nuclear industry or nuclear policy as a whole.

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- To understand the interrelated processes of economizing requires **attention to accounting practices and ideas** (Miller and Power, 2013: 592).
- Applying to this paper, the role of accounting used for the purpose of Tepco's fulfilling its responsibility to Fukushima need to be further investigated.
- For example, the **reasons, means, and consequences** of the following economic scheme, financial statements and accounting benchmarks need to be clarified.



Source: Kanamori and Käberger, 2019

Tepco balance sheet for the year ended March 2019 (summary, unit: 1 trillion yen)

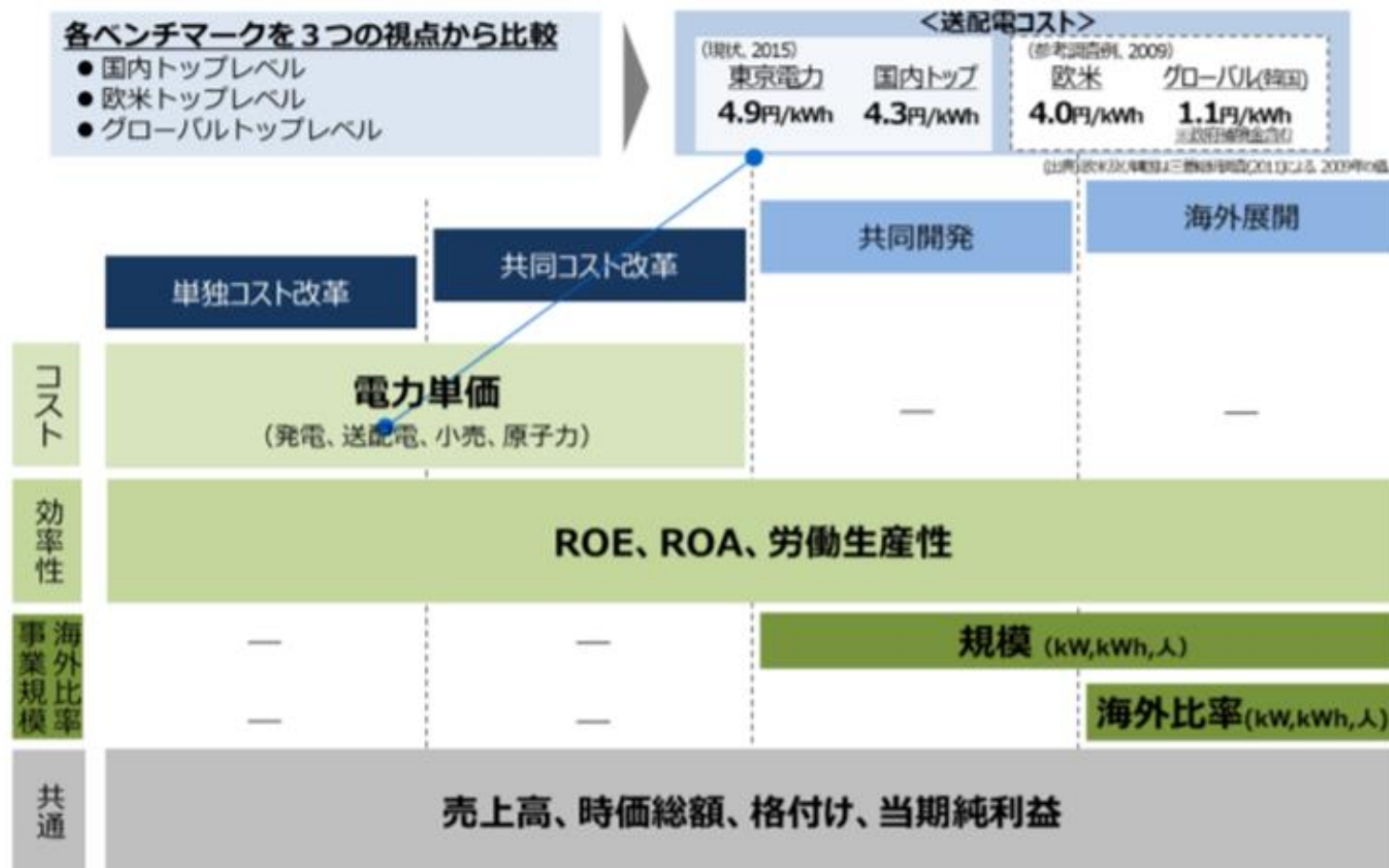
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Benchmarks linked with responsibility

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