

## **RISK DISCLOSURE IN SUSTAINABILITY REPORTS OF ITALIAN PUBLIC UTILITIES**

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### **Abstract**

Corporate Social Responsibility may be seen as an essential element of corporate risk management contributing to a company's survival.

The link between CSR and risk management is even deeper in public utilities because they have to be accountable while carrying out activities that potentially impact on the current and future citizenry. The presence of local governments or/and the State as Italian utilities' shareholders may lead those companies to disclose even more information than private ones, although a difference in sustainability disclosure may be found when the closeness of the relationship with the local communities is weakened.

Accordingly, this paper investigates the features of the risk disclosure within the sustainability reports of Italian utilities companies listed at the Milan Stock Exchange, while detecting the role played by the local government or State ownership in this issue.

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The work

## 1. Introduction

In the last decades, risk talk has tremendously increased. Many internal and external factors drove companies to adopt frameworks for managing risks and satisfy the external demand of accountability but also the need of more information for decision-making within the companies. Firms anticipate and reduce potential sources of business risks by the means of Corporate social responsibility (CSR) which avoids possible conflicts between the company and the society that are related to governmental regulation, environmental damages and divergence with the labor force (Bowman, 1980; Orlitzky and Benjamin, 2001; Heal, 2005). Moreover, CSR may reduce uncertainty in business relations along the supply-chain (Das and Teng, 2002) and contributes to increase reputation in the eyes of customers, potential employees, and regulators (Toyne, 2003). Accordingly, CSR is held as an essential element of corporate risk management (Kytte and Ruggie, 2005) as echoed by institutional investors' belief regarding the strong correlation between company's social and environmental policies, its risk management strategy, and ultimately its financial performance (Ernst & Young, 2011).

The link between CSR and risk management is even deeper for public utilities as they operate in regulated industries, facing many constraints in a highly uncertain environment (Grigg, 2006; Walker, 1998). They provide essential services (e.g. water, energy) that may impact on the environment and serve millions of customers whose demand for social responsibility and environmental care is increasing. Furthermore, they are particularly sensitive to sustainability-related risks and environmental issues (e.g. Gough, 1997; English, 2000; Boschee, 2005) while they are expected to be responsible and accountable for the local communities they serve (Von Schwedler, 2011). Accountability is a key matter also for local governments (LGs) or the State, which are often majority shareholders of public utilities (Roberts and Scapens, 1985).

These companies have already recognized that satisfying the needs of key stakeholders through business sustainability is central to minimizing strategic business risks (Jones, 2001). In some cases, social, environmental and economic data are even integrated into risk management as well as in other management functions, although the integration into the performance management systems seems to no be so spread (Rinaldi and Bonacchi, 2007). Sustainability indicators may be used also as a means of evaluating risks and developing plans (Adams and Frost, 2008).

Accordingly, sustainability disclosure is fundamental to allow stakeholders a better understanding of the company's orientation toward a sustainable development (Baldarelli, 2009) and the impact of uncertain events on people's lives (KPMG, 2008; Brockett and Rezaee, 2012). Moreover it entails benefits in terms of social and political consensus, accountability and visibility as well as corporate objectives' achievement (Gray et al., 1996). Corporate social reporting could be also viewed as a part of reputation risk management processes (Bebbington et al. 2008), while failure in disclosing increases risks (Ernst & Young, 2010).

As sustainability reports represent the ideal tool for communicating companies' financial, social and environmental impact to stakeholders, the present study aims at investigating the features of the risk disclosure within the sustainability reports of public utilities while detecting the role played by the State or a local governments which have ownership in this issue. Since the relationship with citizens is farther and more indirect when moving from lower government tiers (e.g. LGs) to the State, we question if the level of disclosure may vary according to the different type of utilities' shareholders. Also, those kind of companies may disclose even more than totally private owned ones.

In order to answer this question, prior literature regarding risk disclosure and sustainability reports, which grounded the research hypothesis, is analyzed (section 2). Then, an empirical examination of sustainability reports has been performed using the content analysis technique (section 3). Final sections (4 and 5) present descriptive statistics and provide some conclusions.

Results of the empirical analysis indicate that sustainability reports are used to disclose different risk categories, not only environmental ones. Information about risk responses and management practices are also provided, however there is not a clear and strong evidence that risk management

tools (i.e. quantitative and qualitative instruments as mean-variance analysis) are used to identify, calculate, prevent or respond the expected impact of company actions on the well-being of future generation. Moreover, results indicate that the presence of the State or LGs in utilities' capital is associated to a different level of disclosure.

## **2. Prior literature**

### **2.1. The importance of risk management in Italian utilities**

Risk discourse had tremendously increased in the last decades. Although it may be argued that the environment is riskier than before, some Authors relate the risk management explosion to the corporate scandals (Grant and Visconti, 2006), while others to the need of maintaining the perceptions of control and manageability (Power, 2007).

External inputs for risk management implementation are certainly due to the inclusion of Enterprise Risk Management systems in the rating agencies' methodology for non-financial institutions as well as to compliance to regulation and self-regulation.

Italian utility companies operate in highly uncertain legislative and political scenarios, under many legal, economic and operative constraints (McNabb, 2005; Ricci and Landi, 2011), that hinder the achievement of strategic objectives. The latter are particularly at risk in the companies defined as local utilities where Local Governments (LGs) are still the majority stakeholders (Bognetti and Robotti, 2007) and reserve the right to accept the appointment of CEO made by the private partner or increase majorities for some matters such as approval of strategic planning (Grossi, 2007). Here, LGs still play a regulator and steering role ensuring that the providers comply with technical, qualitative and economic standards and that the public interest is served (Broadbent and Guthrie, 2008). Thus, the multiple LGs' roles potentially create corporate governance' concerns (e.g. Hadlock *et al.* 2002; Grossi, 2007; Menozzi, 2009; Martinez *et al.*, 2011) that draw the attention to risk management (Broadbent and Guthrie, 2008).

In addition, Italian utilities have the duty to assure the continuity of the provision at certain standard level and unjustified long interruption may cause to lose the status of provider. They must be able to address or be prepared for the multiple factors that can cause high impact and low probability events (e.g. blackouts or terroristic attacks) (NACD, 2011) as well as unknowns that can have extreme consequences on the company and overall on the citizenry.

When strategic vision, agility, adaptation and anticipation of disruptive events are needed (PricewaterhouseCoopers, 2009), an effective and integrated risk management may help since it fosters the strategy setting and the achievement of strategic objectives. Frameworks such as the COSO ERM, AS/NZS 4360:2004 and FERMA suggest to perform specific activities (i.e. risk identification, assessment, responses and control) and share the premise that risk management strategy should be aligned to business objectives and key strategies.

Holistic risk management frameworks rely on the effort of all organization's levels. The Board of Directors ensures the consistency of the risk management processes designed and implemented by senior executives and risk management professionals while controlling that risk management processes are functioning as designed (Branson, 2010). It should devote time to discuss and analyze information about the entity's risk management program and the most significant risks impacting the company's ability to reach strategic objectives. The primary risk oversight responsibility may be assigned to a Risk Management Committee established within the Board, without being a "silos". More and more often a Chief Risk Officer (CRO) is appointed (Mikes, 2010).

Regardless the type of framework implemented and how robust the effort to identify risks is, some unknown risks will anyway remain unknown at the end of the process, but companies need to be prepared for them (Apgar, 2006) enhancing corporate resilience. As strategic management is conceived as handling the exceptions, coping with unpredictability and disorder (Stacey, 1996), a

preparatory effort that contains both resilient-oriented strategies and anticipation-based strategies is necessary (Boin and Lagadec, 2000). Thus, tools such as crisis management and business continuity management (Herbane *et al.*, 2004; CMI, 2012) as well as business contingency plans (BCP) and disaster recovery plans (DR) are claimed to be useful in supporting companies in mitigating, accepting and restoring from a potential business disruption (Del Miglio, 2008; Grigg, 2006; MacGillivray *et al.*, 2007; Shaw and Lewis, 2006) when top-level decision makers are aware of the importance of managing uncertainty (Boin and Lagadec, 2000;).

## **2.2. Risk information in sustainability reports**

Risk information is mainly reported in annual reports and specific documents required in case of listing, IPOs or other particular conditions. Thus, literature's attention has been devoted to the risk factors section of IPO prospectuses or the Management's Discussion and Analysis where regulators require listed companies to indicate all risks faced during the year and how they have been managed (Deumes, 2008; Lajili and Zéghal, 2005; Santhosh and Cox, 2007). Also, Italian companies' annual reports must disclose risk information such as financial, credit, price, and liquidity risks (art. 2428 of civil code).

However, companies may provide voluntary information about all types of risk and their management practices in different documents, including sustainability reports (Aureli and Salvatori, 2012) whose readers are asking for more information about sustainability impact, risks and opportunities (KPMG, 2008; KPMG and Sustainability, 2008).

According to the Global Reporting Initiative's (GRI), a sustainability report is a tool to report on economic, environmental, and social impacts of companies' activities (the so called triple bottom line of a company's performance), which helps maintain organizations' relationships with their stakeholders.

GRI's principles, which are the most used among large companies (KPMG, 2008), provide a guideline to correctly select the company's areas of disclosure and performance indicators that are most suitable to provide a balanced and reasonable presentation of the organization's outcomes (GRI, 2006)<sup>2</sup>. There is no mandatory list of issues to be addressed, however sustainability reports tend to be similar in disclosing social, environmental and economic performances (Kolk, 2004). Social disclosure regards human resources (including data on labor standards, total workforce, contract-types, recruitment, remuneration, training, diversity), the community (in terms of impact of business activities on local populations, local development and company's engagement with local stakeholder groups) and related issues on health and safety. The environment is the second area of communication (e.g. emissions to air, water and ground, consumption of energy, water and raw materials, compliance with mainstream standards of practice or certification regarding products and processes), while information about economic impacts complete company's disclosure with indications about financial objectives, corporate governance, and shareholder value (Ernst & Young, 2011).

Each area is usually described in terms of past performance, often recurring to key performance indicators to reveal whether the company has or hasn't reached its sustainability objectives (Kolk and Mauser, 2002). Concurrently, companies describe programs and activities realized to reach such objectives and to avoid situations that could have negatively affected its personnel, the

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<sup>2</sup> According to GRI's principles a company should select the information to be disclosed considering its materiality (information should be relevant in terms of financial, social and/or environmental impact and capable of influencing the assessments and decisions of stakeholders, thus worthy to be reported), stakeholder inclusiveness (information should explain how the company has responded to stakeholders' expectations and interests), its role within the context of sustainability (information about company's impacts should be described in relation to the wider context) and completeness (information should be sufficient to enable stakeholders to assess the reporting organization's performance).

community or the environment (e.g. how safety risks have been reduced or negative consequences from possible environmental disasters have been minimized).

Information about short-term impacts generated by activities carried out during the reporting period should be integrated with well-reasoned estimates of future social, environmental and economic impacts (both positive and negative) (GRI, 2006). Thus, as indicated by Krysiak (2009), futurity lies at the core of sustainability, implying the consideration of uncertainty and the assessment of the risks that current decisions cause on the future society, environment, and the company itself.

Equally important is the description of the most important risks and opportunities arising from sustainability trends. Disclosure of risks, opportunities and the governance mechanisms in place to specifically manage them composes the basic content of a report.

Risks and opportunities have to be prioritized according to their relevance for long-term strategy, competitive position, and financial value drivers. For example, climate change issues could have a strong impact because they may pose regulatory risks (a change of the legislation to comply with), operational risks (i.e. interruption of production processes) or affect the company reputation and financial situation (Rindfleish, 2008; Doran and Quinn, 2009).

Thus, a sustainability report may include several information about risks and presents many similarities with risk reporting as it describes the possibility of events positively or negatively affecting a company's economic, social and environmental performance<sup>3</sup> as well as the management's responses, while linking risks to a company's strategy and objectives.

Although there is no precise rule or general trend in companies' reporting behavior, some authors have identified five types of risk relevant to sustainability and sustainability disclosure: strategic, operational, legislative or compliance, reputational, and financial (Ernst & Young, 2011; Brockett and Rezaee, 2012). Sustainability entails strategic risks as, for example, a change in consumer demand towards green products may impose additional investments to create new products. Otherwise, attention to energy saving may generate the opportunity to improve internal efficiency. Operational risks can arise with climate change as it can lead to damage to infrastructure and assets and increased maintenance expenses, which in turn interfere with operations. Sustainability programs sponsored by the governments as well as additional reporting requirements imposed by regulators in relation to environmental issues (e.g. gas emissions) represent a source of compliance risks. Reputational risks derive from increasing external stakeholders' pressure on company's CSR practices while financial risks are associated to low sustainability performance (i.e. a low ranks in the Down Jones Sustainability indexes) and scarce external communication about social and environmental issues which lead investors to decrease a company's value.

### **2.3. Factors influencing risk disclosure in sustainability reports**

Several studies have investigated company voluntary disclosure, drawing from at least three different theoretical frameworks, i.e. agency theory, stakeholder theory and legitimacy. According to them, external information is provided to reduce information asymmetries and the cost of capital, increase credibility and attract new investors, improve company's image toward stakeholders and/or gain legitimacy. These motivations can explain company's disclosure of both risk and environmental information.

However, the quantity and quality of information provided may differ from company to company. Studies have highlighted a wide variation in detail and clarity of risk reporting (Roulstone, 1999; Lajili and Zégha, 2005; Woods et al., 2009) as well as differences in corporate responsibility reporting related to the country or the sector in which companies operate (KPMG, 2008; 2011). This has led many researchers to investigate on the possible drivers of companies' disclosure behaviour.

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<sup>3</sup> Interestingly, also in the field of sustainability, risk definition expanded from the mere possibility of a negative or harmful economic consequence of an event (Crouhy et al., 2006) to the possibility that future events might produce a reality different from what expected (Renn, 1998).

Risk communication usually depends on the balance between costs (direct and indirect) and benefits associated to public disclosure (Dobler, 2008; Deumes, 2008), but there are several specific factors that may be relevant such as company's profitability, industry, risk profile, governance characteristics and size, with the last element as the most relevant (Ahmed and Courtis, 1999; Robb et al., 2001; Beretta and Bozzolan, 2004; Linsley and Shrides, 2005; 2006). Actually, the aforementioned company's characteristics can be both a driver (Deumes and Knechel, 2008) and an enabling factor (Cooke, 1989).

Similar considerations have emerged also with reference to environmental disclosure. Martin and Hadley (2008) indicate that managers weigh possible advantages and disadvantages of voluntary reporting. Others have listed a wide range of influencing factors at the firm, sector, and societal level (Adams, 2002; Lee and Hutchison, 2005; Contraffatto, 2009). Thus, analogous considerations may be applied also to risks described in sustainability reports.

Managers will consider, on one hand, that disclosing environmental risks (i.e. pollution) requires additional direct costs related to the collection and certification of the related information and may cause indirect costs such as an increase in probable investigations by the government, a negative attention of NGOs, possible costly litigations, and the peril of providing competitors with information about firm-specific sustainability strategies. On the other hand, they will evaluate how company's reputation, cost of capital, and attractiveness to new investors may improve thanks to more external communication. Moreover, the reporting of risks related to environmental and social issues will depend by both external factors (i.e. country of origin, social and political context) and internal drivers (i.e. attitudes of the company chair and board of directors, ownership and corporate governance structure, the existence of internal structures like a social reporting committee).

With reference to this particular area of disclosure, the features of the internal context seem to be quite important, although they have received less attention in prior researches (Cowen et al., 1987; Adams, 2002; Michelon and Parbonetti, 2012). One factor, in particular, has been poorly investigated: company's ownership structure and its relation to disclosure practices.

Some studies have hypothesized that the presence of investment funds in company ownership is associated to a higher level of risk disclosure (Santhosh and Cox, 2007), while no interest has been devoted to the relationship between risk information and the presence of the State or other local governments. On the contrary, sustainability disclosure seems to be negatively associated to professional investors' ownerships and positively related to the presence of the State (KPMG, 2011).

State-owned companies are among the highest CSR reporters probably because policy mandates a certain level of disclosure from these enterprises as a way of setting an example to the wider business market (KPMG, 2011). According to Larrinaga-Gonzalez and Perez-Chamorro (2008) further qualitative research is needed to understand the nature of sustainability accounting in State-owned organizations, since ethical motivations of people employed in public companies seem to be more consistent with sustainable development than those in the private sector (Ball and Grubnic, 2007).

Coherently, it may be assumed that utilities owned by a public entity tend to disclose more social and environmental information than privately owned firms (Cormier and Gordon, 2001), with a difference between companies owned directly by the State or by LGs. In fact, it is possible to hypothesize that, when moving from the State to a local authority, there is a more strictly contact with the citizenry, thus it may be possible that the level of disclosure increases as it also enhances the local capability to dialogue with the public entity.

### **3. Research method and sample selection**

In order to address the research question, content analysis has been carried out on the sustainability reports of the utilities listed at the Milan Stock Exchange in 2011 having one or more public entities as shareholders.

The research focuses on utility companies because they perform activities that raise strong sustainability concerns (Boschee, 2005) and belong to an industry characterized by a high level of risk disclosure. Beretta and Bozzolan (2004) have noted that these companies record a significant depth of disclosure, probably because of the intense process of mergers and acquisitions that utilities have experienced in the last decade.

As for oil, gas, chemical and pharmaceutical companies, utilities publish more sustainability reports than the average (Kolk, 2004), demonstrating to be consistent reporters through time (Kolk, 2009). According to KPMG (2011), they 'lead the pack', together with chemical, oil and gas companies, for the quality of sustainability disclosure and the level of maturity reached by information systems and internal processes that ensure reliable information. Energy utilities are among the most active companies in sustainability reporting according to GRI's data of 2009, while water companies seem to be more reluctant to disclose social and environmental information (as confirmed also by Larrinaga-Gonzales and Pérez-Chamorro, 2008).

Moreover, with reference to risks associated to climate change, they have been ranked in US as the most prolific companies in disclosure practices, although the quality of information is not always of high value for investors (Doran and Quinn, 2009).

Lastly, focusing just on companies operating in the same business and in the same country leads to results about sustainability disclosure not affected by company characteristics and external context (Adams, 2002).

Just listed companies have been selected because of the easier access to sustainability reports (downloadable from the Stock Exchange and/or companies' websites). Moreover, they are expected to provide abundant information because listing should expose them to stronger public pressures for CS reporting (KPMG, 2011), while also being more transparent about risk management practices to investors due to the regulations they must comply with, the guidelines they should follow, and the demand of a higher number of stakeholders (compared to non-listed companies).

In order to isolate utilities, the total number of listed companies has been filtered following the segmentation proposed by Borsa Italiana. Moreover, only utilities included in one or more FTSE index have been selected to limit the research to the largest companies.

The FTSE Italia Index Series captures around 95% of the domestic market capitalization and represents the performance of Italian companies listed on MTA market which accepts only medium and large companies in terms of market capitalization (a minimum of 40 millions Euros is required). Since the latter has been used as a proxy for firm size also in previous studies (Craven and Marston 1999), FTSE companies are supposed to have enough resources to adopt more mature and structured risk management systems and meet diverse requirements from various groups of stakeholders.

At the end, the selection resulted in the identification of 18 companies that provide public services. 8 of those have LGs as direct or indirect shareholders (local utilities), while the State (directly through the Ministry of Economy and Finance or indirectly through the Cassa Depositi e Prestiti) is shareholder in 4 companies. In one company (Edison) we can find the presence of both LGs and the State (Table 1). Accordingly, just 13 companies have been considered, whose dimension in terms of revenues, ebitda and employees is described in the subsequent table.

Table 1 – Public utility providers and their shareholder profile

	<b>Companies</b>	<b>Index</b>	<b>Shareholders</b>	<b>State-owned(SU) or Local utilities (LU)</b>
1	A2A	FTSE MIB	Municipalities of Brescia and Milan	LU
2	ACEA	FTSE ITALIA Mid Cap	Municipality of Rome	LU
3	ACEGAS-APS	FTSE ITALIA Small Cap	Municipalities of Trieste and Padova	LU
4	ACQUE POTABILI	FTSE ITALIA Small Cap	IREN Acqua Gas S.p.A. and SMA Isonno S.p.A.	LU
5	ACSM-AGAM	FTSE ITALIA Small Cap	A2A and Municipalities of Como and Monza	LU
6	ALERION	FTSE ITALIA Small Cap	Private shareholder	-
7	ASCOPIAVE	FTSE ITALIA Mid Cap	93 different Municipalities	LU
8	EDISON	FTSE ITALIA Mid Cap	A2A, IREN, Municipalities of Trento and Rovereto, MEF	LU/SU
9	ENEL	FTSE MIB	MEF	SU
10	ENEL GREEN POWER	FTSE MIB	ENEL and private shareholder	SU
11	ERGYCAPITAL	FTSE ITALIA Small Cap	Private shareholder	-
12	FALCK RENEWABLES	FTSE ITALIA Mid Cap	Private shareholder	-
13	HERA	FTSE ITALIA Mid Cap	183 Municipalities	LU
14	IREN	FTSE ITALIA Mid Cap	Municipalities of Parma, Reggio Emilia, Piacenza and other municipalities located in Reggio Emilia, Parma, and Piacenza Provinces	LU
15	KR ENERGY	FTSE ITALIA Small Cap	Private shareholder	-
16	Snam Rete Gas	FTSE MIB	MEF and Cassa Depositi e Prestiti, and private shareholders	SU
17	Terna	FTSE MIB	MEF and Cassa Depositi e Prestiti	SU
18	Ternienergia	FTSE ITALIA Small Cap	Private shareholder	-

<b>Companies</b>	<b>Ebitda</b>	<b>Revenues</b>	<b>N. Employees</b>
A2A	1040 (mln)	6041 (mln)	12293
ACEA	666,5 (mln)	3599,7 (mln)	5340
ACEGAS-APS	13,2 (mln)	67,9 (mln)	1381
ACQUE POTABILI	12 (mln)	64,9 (mln)	534
ACSM-AGAM	40,4 (mln)	214,2 (mln)	424
ASCOPIAVE	78 (mln)	855 (mln)	528
EDISON	1264 (mln)	9685 (mln)	3939
ENEL	17480 (mln)	73377 (mln)	803
ENEL GREEN POWER	846 (mln)	2179 (mln)	682
HERA	607 (mln)	3666 (mln)	6500
IREN	602 (mln)	3391 (mln)	4752
SNAM RETE GAS	2540 (mln)	3508 (mln)	6127
TERNA	1069,3 (mln)	1505,1 (mln)	3468

### 3.1. Content analysis

Content analysis is an alternative methodology for research that allows knowledge discovery from textual data (Krippendorff, 2004; Weber, 1985). As suggested by many researchers it can be very useful in the field of accounting and finance as text contains incremental and forward looking information that can better help understand companies' future performance compared to historical financial data recorded in annual reports (Li, 2007). Content analysis has been preferred to other possible techniques as this method is largely diffused in studies regarding risk disclosure and it can be used to perform both a qualitative and quantitative analysis (e.g. D'Onza *et al.*, 2011; Beretta



and Bozzolan, 2004, Lajily and Zhegal, 2005; Linsley and Shrivvers, 2005 and 2006; Dobler, 2008; Bowman, 1984; Beattie, et al., 2004).

Through content analysis, we have analyzed sustainability reports (in case of ACEGAS the document is called citizenry report) referred to year 2010 since they were the most recent ones available for all the companies at the time of the research. However, just 8 out 13 companies prepared such reports (Table 2). It is important to note that all sustainability reports are compliant with the Sustainability Reporting Guidelines & Electric Utilities Sector Supplement (EUSS) provided by the GRI with the exception of Acegas. All companies adopting GRI's principles declare a rank of A+ with the exception of A2A (its ranking is B+).

Table 2- Companies that prepared sustainability reports

	<b>Companies</b>	<b>Sustainability Reports</b>
1	A2A	YES
2	Accea	YES
3	Acegas-Aps	YES
4	Acque Potabili	NO
5	Acsm-Agam	NO
6	Ascopiave	NO
7	Edison	YES
8	Enel	YES
9	Enel Green Power	NO
10	Hera	YES
11	Iren	YES
12	Snam Rete Gas	NO
13	Terna	YES

The analysis has been carried out using Atlas.ti. The process has been split in two phases. The first one includes activities such as creating and segmenting data files, coding text and writing comments and memos, while the second one deals with querying data. Both data-level and concept activities can be easily performed with Atlas.ti as the software provides the researcher with a highly effective means for quickly retrieving all data selections and notes relevant to the issues investigated.

The researchers have first defined a model for interpreting information and prepared a disclosure-scoring sheet containing several categories transformed into Atlas.ti's codes. Well-specified decision rules have been set (Milne and Adler, 1998) and well-defined category decisions have been made, such as exclusive and hierarchical categories.

In this study the recording unit is the sentence, which is preferred in written communication if the task is to infer meaning (Gray *et al.*, 1995). Sentence is meant as any piece composed by subject and verb. When the sentence proved to be too large, it was split into multiple units that were single pieces of information meaningful in their own right (Beattie *et al.*, 2004).

Sentences with more than one attribute had been split into multiple units when each one of those kept its own meaning. Otherwise, the dominance principle has been applied. The sentences were considered pieces of risk information and coded when the reader was better informed about the risks the company faces, their management, regardless the word "risk" appears or not (Linsley and Shrivvers, 2005). With regard to tables, a single line containing specific information has been considered as a sentence.

Then the model has been tested on a single sustainability report to verify if refinements were needed (i.e. the introduction or elimination of possible attributes used to qualify risk information categories).

In order for the content analysis to be reliable, a random report has been coded by the two Authors to verify inter coder reliability. Sentences there was disagreement about have been discussed so to resolve the discrepancies (Milne and Adler, 1998) and refine the coding rules before coding another random report. This process went on until the level of agreement was highly satisfactory.

The categories identified were related to the two following main topics: information about risks and elements of the risk management system.

With regard to the first aspect, 11 categories that describe the types of risk have been labeled (Table 3). These are not limited to the five types of risk (strategic, operational, legislative, reputational, and financial described in par. 2.2.) that are usually held as relevant to sustainability and sustainability disclosure. Further more specific categories have been defined.

The basic premise is that risk is considered as the potential, due to uncertainty, for an event that may have negative or positive consequences on the achievement of corporate objectives. Coherently, risks can be quantified as the result between the probability of occurrence and the outcome (e.g. the impact on the profit margins).

Table 3 – Categories of risks and assigned codes

<b>Categories - Type of risk</b>	<b>Code</b>
<b>financial</b> <i>Risks related to difficulties of counterparts to meet their payment obligations; variations regarding rates of interest and/or rates of change; as well as risks of a lack of liquidity</i>	<b>FIN</b>
<b>environmental</b> <i>Risks related to unwanted discharge of polluting materials</i>	<b>ENV</b>
<b>social consensus</b> <i>Risks deriving from a negative perception of the company and its activities in the local population</i>	<b>SOC</b>
<b>market</b> <i>Risks related to a decrease in market demand, client dissatisfaction, etc.</i>	<b>BUS</b>
<b>energy/commodity</b> <i>Risks related to purchase and selling of gas and oil</i>	<b>ENERGY</b>
<b>legislative/regulation</b> <i>Risks related to unenforceable contracts, adverse judgments, unforeseen consequences deriving from new compliance and information requirements</i>	<b>LEG</b>
<b>operative/operational</b> <i>Risks arising from inadequate information systems, incorrect maintenance of safety and security standards; related to people and processes</i>	<b>OP</b>
<b>governance</b> <i>Risks deriving from the presence of local governments in company's equity which have multiple roles and can create conflict of interests and decisional trade-offs</i>	<b>GOV</b>
<b>strategic</b> <i>Strategic risk is defined as the risk associated with future business plans, adverse business decisions and strategies, as well as improper implementation of decisions, including plans for entering new business lines, expanding existing services through mergers and acquisitions, enhancing infrastructure, etc</i>	<b>STRAT</b>
<b>reputational</b> <i>Risks related to a negative publicity regarding an institution's business practices, whether true or not, which has the potential to cause a decline in the customer base, costly litigation, or revenue reductions.</i>	<b>REP</b>
<b>catastrophe/crisis</b> <i>Risks arising from unforeseen catastrophes.</i>	<b>CAT</b>

Each one of these categories has been coded also with reference the nature of information: qualitative; quantitative/financial; past/current oriented information; forward-looking information (Table 4). Such attributes allowed to investigate the quality of information provided, whose importance has been increasingly stressed in improving stakeholders' understanding of companies'

risks and risk management (Beretta and Bozzolan, 2004; Beattie et al., 2004; Linsley and Shrives, 2006; D’Onza et al., 2011). The importance of having more quantitative risk information rather than descriptive risk lists has been underlined also by ICAEW (2011).

Table 4 – Categories of attributes and assigned codes

<b>Attributes</b>	<b>Code</b>
<b>qualitative information</b> <i>There is a general description of the risk, its nature and eventually its causes</i>	A1
<b>quantitative information</b> <i>When the document provides a quantitative measure of the event’s probability and its consequences or merely there is an estimation of the positive/negative impact on company’s performances</i>	A2
<b>current and/or past information</b> <i>Information refer to the actual state; it just communicate the existence of a risk</i>	B1
<b>forward-looking information</b> <i>Information is projected into the future; it describes and evaluates the future of the firm and its operating context</i>	B2

Moreover, specific categories have been defined with reference to risk management elements (Table 5), following the scheme adopted in a previous study (Aureli and Salvatori, 2012). These categories have been chosen as key aspects that should help understand the characteristics of risk management systems companies have in place as highlighted by the literature (see par. 2.1). For example, in order to understand whether there is an enterprise-wide risk management system in place or not, coded information regarded the board’s involvement, the presence of a specialized risk management unit at the central level, the analysis of interdependences among risks and the calculation of the company’s overall risk exposure.

Table 5 – Categories of risk management elements and assigned codes

<b>Risk Management elements</b>	<b>Code</b>
<i>Risk Identification</i>	<b>IDENTIFICATION</b>
<i>Information on qualitative techniques for measuring risks</i>	<b>QUAL MEASUREMENT</b>
<i>Information on quantitative techniques for measuring risks</i>	<b>QUANT MEASUREMENT</b>
<i>Specific actions for risk mitigation, transfer, elimination</i>	<b>RESPONSE</b>
<i>Holistic approach to risk management</i>	<b>INTEGRATION</b>
<i>Definition of overall risk appetite and risk exposure</i>	<b>OVERALL</b>
<i>Link between risk management and strategic planning</i>	<b>STRATEGY</b>
<i>Implementation of a formalized risk management framework</i>	<b>MODEL</b>
<i>Board and/or CEO Control and oversight over the risk management system</i>	<b>BOARD</b>
<i>Specialized experts and figures for the overall risk management effort (e.g. Risk Management Dpt., Risk Management Committee at the Board level)</i>	<b>SUPERVISION</b>
<i>Tools for managing and preventing disruptions (e.g. Business Continuity Management, Catastrophe Management, Contingency Planning, Disaster Recovery)</i>	<b>CONTINUITY-CATAS</b>

#### 4. Data Analysis

Legal risks are the most quoted ones (Table 6). This may be no surprise, since the utility sectors is highly regulated. Thus, European directives, national laws, and the regulative role of water and energy authorities may positively or negatively influence the business. In addition, the chance of litigations may be very high because of possible or actual environmental impacts as well as

citizenry reaction (or overreaction) to new facilities (e.g. Nimby, Lulu, Nomtof). Operative risks (related to employees' safety, machinery maintenance and customers' data protection) appear also very often throughout the reports. Far behind are financial, business, and strategic risks, whose presence is probably limited to annual reports. Financial risks communication is actually compulsory in the MD&A, while their voluntary disclosure in sustainability reports seems scarce. Nevertheless, they may have a relevant impact of a company's economic performance as well as energy risks.

Also environmental risks and risks related to social consensus are partially disclose. This unexpected results can be explained by the fact that sustainability reports focus on companies' objectives regarding the environmental and the society, listing all the initiative undertaken to reach their targets and improve the local territories, to not mention the possibility of plant accidents and unwanted discharge of polluting material. Similarly, companies stress their attention to all stakeholders and cite all different instruments and processes adopted for stakeholder engagement, but the information about existing conflicts with local communities that may impact organizational performances is rare.

Tab. 6 – Quotation counts of risks for each company's sustainability report

Categories -Type of risk	HERA	ACEGAS	IREN	A2A	ACEA	EDISON	ENEL	TERNA	tot.
LEG	20	1	9	6	8	4	11	10	69
OP	3	0	4	3	4	3	6	8	31
FIN	5	0	2	4	0	2	1	1	15
BUS	3	1	0	2	0	1	0	6	13
SOC	0	0	2	1	2	0	3	5	13
ENV	2	0	3	2	1	0	3	1	12
STRA	1	0	0	0	1	2	4	4	12
CAT	0	0	2	3	0	1	0	0	6
REP	0	0	2	0	2	0	0	2	6
ENERGY	0	0	1	2	0	1	1	0	5
GOV	0	0	0	1	0	0	0	0	1
TOT.	34	2	25	24	18	14	29	37	183

As emerged in previous studies, risk information is mainly qualitative. In fact, 152 quotations out of a total of 183 consist in a general description of the type of risk, with details about its source (e.g. a new specific law, changes in the consumer demand or the market price) and its nature. A measurement of probability and impact is rare. So it is also the reporting of forward-looking information which is mainly related to legal issues (Tab. 7).

Tab. 7 – Quotation counts of risks with attributes

Categories -Type of risk	HERA	ACEGAS	IREN	A2A	ACEA	EDISON	ENEL	TERNA	tot.
BUS A1	2	1	0	2	0	1	0	5	11
BUS A2	0	0	0	0	0	0	0	0	0
BUS B1	0	0	0	0	0	0	0	0	0
BUS B2	1	0	0	0	0	0	0	1	2
<b>sub-tot</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>13</b>
CAT A1	0	0	2	3	0	1	0	0	6
CAT A2	0	0	0	0	0	0	0	0	0
CAT B1	0	0	0	0	0	0	0	0	0
CAT B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>
ENERGY A1	0	0	1	2	0	1	1	0	5
ENERGY A2	0	0	0	0	0	0	0	0	0
ENERGY B1	0	0	0	0	0	0	0	0	0
ENERGY B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>5</b>
ENV A1	1	0	3	2	1	0	3	1	11
ENV A2	0	0	0	0	0	0	0	0	0
ENV B1	1	0	0	0	0	0	0	0	1
ENV B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>12</b>
FIN A1	3	0	1	4	0	2	1	1	12
FIN A2	1	0	1	0	0	0	0	0	2
FIN B1	1	0	0	0	0	0	0	0	1
FIN B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>15</b>
GOV A1	0	0	0	1	0	0	0	0	1
GOV A2	0	0	0	0	0	0	0	0	0
GOV B1	0	0	0	0	0	0	0	0	0
GOV B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
LEG A1	17	1	4	3	6	4	8	7	50
LEG A2	2	0	2	0	0	0	1	0	5
LEG B1	0	0	0	2	1	0	0	0	3
LEG B2	1	0	3	1	1	0	2	3	11
<b>sub-tot</b>	<b>20</b>	<b>1</b>	<b>9</b>	<b>6</b>	<b>8</b>	<b>4</b>	<b>11</b>	<b>10</b>	<b>69</b>
OP A1	2	0	3	3	3	3	4	8	26
OP A2	0	0	0	0	0	0	0	0	0
OP B1	1	0	1	0	1	0	2	0	5
OP B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>6</b>	<b>8</b>	<b>31</b>
REP A1	0	0	2	0	2	0	0	2	6
REP A2	0	0	0	0	0	0	0	0	0
REP B1	0	0	0	0	0	0	0	0	0
REP B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>6</b>
SOC A1	0	0	2	0	2	0	3	5	12
SOC A2	0	0	0	0	0	0	0	0	0
SOC B1	0	0	0	1	0	0	0	0	1
SOC B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>13</b>
STRA A1	1	0	0	0	1	2	4	4	12
STRA A2	0	0	0	0	0	0	0	0	0
STRA B1	0	0	0	0	0	0	0	0	0
STRA B2	0	0	0	0	0	0	0	0	0
<b>sub-tot</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>12</b>
<b>TOT.</b>	<b>34</b>	<b>2</b>	<b>25</b>	<b>24</b>	<b>18</b>	<b>14</b>	<b>29</b>	<b>37</b>	<b>183</b>

A more relevant amount of information is provided in relation to processes, systems, and initiatives undertaken to manage risks. As displayed in Table 8, quotations regarding elements of the risk management system almost double the ones of risk categories. Major attention is dedicated to the description of research projects, controls, employees training, and other activities in place to prevent peoples' accidents, injuries, service interruptions, employees or suppliers misconduct that may lead to administrative crimes. Moreover, it is possible to uncover some insights regarding the

presence of specialized functions or committees devoted to risk management activities as well as the functioning of specific programs planned to recover from service interruptions due to unpredictable events such as earthquakes.

On the contrary, there are scarce hints about both the techniques used to assess risks and the existence of a link between risk management and strategy formulation.

Tab. 8 – Quotation counts regarding risk management practices

Risk Management elements	HERA	ACEGAS	IREN	A2A	ACEA	EDISON	ENEL	TERNA	tot.
RESPONSE	25	8	43	27	28	12	67	42	252
SUPERVISIONE	1	0	2	1	4	1	3	1	13
CATASTROPHE	0	0	3	1	0	0	5	2	11
IDENTIFICATION	1	0	0	0	2	1	5	1	10
INTEGRATION	0	0	3	0	1	2	3	0	9
MODELLO	1	0	1	1	0	3	1	0	7
BOARD	1	0	2	1	2	0	0	0	6
QUANT MEASUREMENT	0	0	0	1	0	0	3	0	4
STRATEGIA	0	0	0	0	0	1	3	0	4
OVERALL	0	0	0	0	0	0	1	0	1
QUAL MEASUREMENT	0	0	0	0	0	0	0	1	1
tot.	29	8	54	32	37	20	91	47	318

Absence of useful information about the risk management model adopted, the approach used to manage risk (i.e. by silos or integrated) and company's attempt to define an overall measure of risk exposure may be explained in two different ways. The lack of this kind of information may be related to a traditional risk management approach, i.e. each department is responsible for its own risks and there is no specific model in place, which makes difficult also to have an overall measure. Conversely, such information may be actually disclosed, but in annual reports which are usually addressed to investors and thus more attentive to corporate governance aspects.

Adding together quotations regarding risk types and risk management elements for each company, we notice that Terna and Enel are the companies that disclose more information, while Acegas and Edison are the lowest performers. Thus, first data indicate that companies with the State among their shareholders disclose more information than the ones with LGs. Anyway some differences in ranking emerge if we look at the types of risks disclosed or at elements that may help understand the company's approach to the management of risks.

With reference to Terna, we know that along with the Italian government, which represents the main shareholder with about 30% of shares in 2010, there is also a relevant presence of socially responsible investors or ethical funds with 14% of shares. Terna is included in the Dow Jones Sustainability Europe Index and the Dow Jones Sustainability World Index. Similar characteristics are found in Enel, owned by the Italian government (MEF) for 31,9% and by socially responsible investors for about 17% of its equity and included in the Down Jones Sustainability Indexes.

Probably these companies' higher level of disclosure is also influenced by their greater attention to sustainability driven by the presence of socially responsible investors. Also GRI's principles may be influential to push companies to provide a more comprehensive description of their actual and future situation. While ACEGAS's option for a different standard (it provides a citizenry report) leads to a poorer picture of company's performance.

With reference to company size we notice that the smallest organizations either do not have a sustainability report (Acquepotabili, Acsm-Agam, Ascopiave) or provide a limited amount of information. However, a greater dimension is not always associated to better disclosure as demonstrated by the case of Snam Rete Gas (whose sustainability report is missing) and by Edison.

## 5. Discussion and conclusion

Results indicate that sustainability reports are used to disclose different types of risk, not only environmental risks as one could expect. Information about risk responses and management practices are provided with more details, however there is not a clear and strong evidence that risk management tools are used to calculate, prevent or respond the expected impact of company actions on the well-being of future generation as requested by some authors (Krysiak, 2009).

With reference to our first hypothesis, it is interesting to note that none of the companies whose shareholders are just private partners have prepared a sustainability report. The situation looks better in companies whose equity is totally or partially held by local governments (two third of them prepared a sustainability report) or by the State (2 out of 4 companies). Thus, it is possible to affirm that public entities do play an important role in influencing the adoption of a socially responsible behaviour and its communication to stakeholders.

At the same time, results have demonstrated that the presence of a large public shareholder as the State is associated to higher disclosure practices, confuting the hypothesis that the presence of local authorities generate a more strictly contact with the citizenry and thus a more detailed public reports on companies' activities and impacts.

However, these results may also suggest that strict relationships among utilities companies and their local communities and stakeholders do not require extensive disclosure because other tools of communication and control may be in place such as personal confrontation with relatives working inside the organization or public managers located in the same city or jurisdiction. Future research is needed in this area.

This study contributes to discussion in sustainability area from a corporate governance perspective by examining relationships among type of investors (public, private, local and national) and risk reporting related to the social and environmental dimension. In particular, it contributes to the analysis of drivers and influencing factors of voluntary disclosure about risk in sustainability reports, going beyond the idea that reporting is the response to generic public and economic pressures as also firm-specific factors (i.e. shareholder composition) may also play an important role.

Studying current risk disclosure practices, this work also indicates that risk reporting in sustainability reports can not be considered as an area of best practice for corporate risk communication. Financial communication practitioners need to be engaged in considering whether such reports may be improved.

Lastly, it also indicates that GRI's guidelines favor risk disclosure within sustainability reports.

Limits of this work are related to the small number of documents analyzed. Moreover it could be argued that public ownership is just one among other factors that affect quality and quantity of voluntary disclosure and maybe not the most important one. Further research is needed to test the different impact of possible drivers.

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