



Perspective

Climate protection or corporate promotion? Energy companies, development, and sustainability reports in Latin America



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ABSTRACT

There is an agreement in the academic literature about the crucial role of energy to development. Energy can contribute with the three dimensions of development: social, economic and human. However, energy poverty is a concern in this regard and in this paper we explore this issue in Latin American energy firms. The aim of this study is to identify the frequency of words about development in sustainability reports of Latin American companies in the energy industry. The frequency of words was analyzed through the content analysis based on a list of 61 development-related words. We observed that the annual reports of 93 companies in the years of 2012 and 2017 addressed issues such as development, education, poverty, and human development. There is also evidence of improvement in this information over time. We found arguments in the reports showing how energy companies can promote the development of their respective regions, but the arguments about the contribution for indigenous communities seem to deserve more attention. Moreover, companies' size seems to play an important role to improve the understanding on information about development.

1. Introduction

Development, the New Name for Peace. “76. Extreme disparity between nations in economic, social and educational levels provokes jealousy and discord, often putting peace in jeopardy”. (*Populorum Progressio, Encyclical of Pope Paul VI on the Development of Peoples, March 26, 1967*)

In both developing and developed countries, the main obstacle for sustainable development is poverty [1]. Usually, the concept of poverty is associated with monetary terms; however, it should be treated as a multidimensional concept, considering different components of well-being [2]. Moreover, poverty is related with deprivation, and deprivation “can be thought of in terms of constraints on people's choices to access certain material goods, assets, capabilities, freedoms and opportunities” [2,p. 2084].

Considering that development and poverty are associated, the measures to reduce poverty can also have a positive effect on development. Access to electricity can contribute to a reduction in poverty [1] and to sustainable development [3]. There is an important link between poverty and energy [2] and the relationship between these two variables has been a concern among development specialists [4]. “As

countries progress their energy consumption increases” [5,p. 379], which reinforces the benefits of energy to the economic development [5].

The benefits of energy are not limited to the economic dimension of development. The demand for energy in poor households is usually lighting and cooking [6]. When these individuals have access to energy, their quality of life can drastically improve, but these benefits are also related to income, environment, health and education [1], which indicates the positive effects of energy to human development. Observing the definition of Sen [7] about development, González-Eguino [5,p. 379] states that “not having access to energy may mean being deprived not only of basic services such as cooking and home heating, for instance, but also other elements which are fundamental for individual and collective development, such as access to education, health, information and participation in politics” [5,p. 379]. Considering this development includes economic benefits related with a more comfortable and convenient life [8].

This seems to be an important gap related to inequalities in the access to basic facilities, particularly in Latin America, as presented by Malaquias and Albertin [9]. The authors present, for example, that the access to electricity has relevant differences in Latin American

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countries, where some countries have good indexes (such as Argentina, Chile and Cuba), but others have a more delicate scenario (such as Haiti and Nicaragua). These considerations become more salient when we observe that disparities within and among developing countries can affect social instability and human development [10].

Disparities are available, for example, in some regions, where technological innovations present a higher demand from people, while in other cities people suffer with precarious conditions. “While people in major cities and developed countries enjoy an ever-expanding selection of applications and other innovations to help them live more efficient, safer and entertaining lives, millions in the hinterlands of Africa, Asia and Latin America are still waiting for the digital revolution to arrive” [11]. Considering that energy is an important ingredient for development, firms that operate in the energy industry have a crucial role in their local areas. When consulting previous research about energy and development and studies related with ICT4D, we found a gap to be addressed: a more comprehensive analysis about the contribution of companies in the energy industry to the development of their surrounding areas. Therefore, the aim of this study is to identify the frequency of words about development in sustainability reports of Latin American companies in the energy industry. In order to analyze the frequency of words, we employed the content analysis based on a list of 61 development-related words. To develop this analysis, we considered the three dimensions of development [7]: economic, social and human.

Considering the situation of many parts of the developing world, there seems to exist a potential conflict that affects development in terms of priority of investments [8]. This conflict can be observed when “short-term economic needs may take priority over long-term investment in education and learning” [8,p. 1]. According to Pachauri et al. [2,p. 2086], “although there is a fairly substantial literature on the existence of energy-poverty linkages, there is relatively little direct, empirical evidence concerning the nature of these linkages in developing countries”. This study can fill this gap and present a comprehensive panorama about the contribution that companies in the energy industry can provide to their respective areas.

This study is comprised of five sections, including this introduction. Section 2 presents a literature review about development and sustainable development. We present the criteria employed to collect and analyze data in Section 3. Section 4 contains the main results and discussion. Finally, in Section 5, we present the final remarks and suggestions for further research.

2. Literature review

Studies on development involve different disciplines and levels, since development can be viewed as a multifaceted term [12,13]. Regarding the energy industry, previous research have reported the contribution of energy to economic, social and human dimensions of development [1,4,5,10,14].

Energy can enable social and human development through access to modern health facilities, education, and communication [14]. Despite its importance, part of the world's population, particularly in developing countries and in rural areas, lives under conditions of energy access deprivation [5,15–17]. Therefore, energy poverty, that is “the situation in which energy access is not established yet” [1,p. 2026] represents one of the main problems that the energy industry will need to face in the next decades [5].

Energy is considered to be a core component of societies and a traditional factor of production [14,17]. Solarin and Ozturk [18] explored the relationship between hydroelectricity consumption and economic growth in Latin America countries (Argentina, Brazil, Colombia, Ecuador, Chile, Venezuela and Peru) and found a long run unidirectional causality from the first to the second variable in Brazil, Colombia, Chile, Ecuador and Peru. Shahbaz et al. [19] also identified a positive relationship between energy consumption and economic growth in the top ten energy-consuming countries.

Production depends on energy and economic growth demands an intensive energy use [20]. However, the increasing energy use and the greenhouse gases emissions associated to it are considered the primary cause of adverse environmental effects and climate change [20,21]. According to Zhou et al. [22], climate change and energy consumption have become the most complex challenge in global environment facing human development.

In this context of a climate-constrained world, highly humanly developed countries have been producing and consuming renewable energy instead of non-renewable energy, since renewable energy plays a fundamental role to secure future climate change [14]. While in the past the criteria to choose the energy system was the technical and economic viability, over the last few decades the criteria for this decision changed to the environmental impact of the energy system [23,24].

Renewable energy technologies can also contribute to equitable access to energy, particularly for low-income and vulnerable populations. McCabe et al. [25] argue that the development of renewable energies allowed individuals and communities to act as both consumers and producers, changing the traditional way in which distribution in energy systems occurs. Because of this phenomenon, communities of energy ownership have emerged, which, despite various difficulties and barriers, have a potential to democratize the provision and access to energy, especially for low-income households.

A term that emerged with this trend was “sustainable development”, which seeks to harmonize economic growth and socio-environmental aspects. Bhattacharyya [15] states that sustainable development is a broader concept that involves not only economic growth, but also a development based on three fundamental pillars: economy, environment and society. Therefore, this concept contrasts with the traditional idea of development focused on income generation and wealth accumulation. In other words, sustainable development represents an “equitable environment-friendly and balanced development” [15,p. 261].

Due its importance, the relation between energy and sustainable development received a great deal of attention from academic researchers over the past years. Bhattacharyya [15] provided a critical review about energy and sustainable development by analyzing relevant literature on the subject and the application of a multi-dimensional sustainability framework to energy access programs. The author concluded that a rebalancing of approaches to enhance energy access is required to ensure the linkage between economic development and sustainability, since the programs analyzed supporting energy access did not show to contribute to sustainable development [15].

In this context, according to Streimikiene et al. [26], the demand for sustainable development in the past decades has made the use of sustainable energy sources an imperative standard. However, the selection of sustainable energy sources is a complex task, since it involves multiple variables and conflicting objectives (such as financial costs, availability, security, environmental impact, etc.). As a way to address these decision problems, Streimikiene et al. [26] proposed a multi-criteria decision support framework to select the most sustainable electricity production systems. Among the results, the authors found that renewable energy systems based on water and solar power sources are the most sustainable ones, which should be considered in future energy policies in order to ensure economic, social and environmental development [26].

Latin America, the focus of this study, has a great potential to boost its development through energy efficiency. Camioto et al. [27] analyzed the renewable and sustainable energy efficiency of Latin American countries using the data envelopment analysis (DEA) method. Their results showed that Brazil, Uruguay and Venezuela have the highest renewable and sustainable energy efficiency (above 85%), while Mexico, Bolivia, Ecuador, Guatemala and Argentina presented renewable and sustainable energy efficiencies below 30%. Still regarding energy efficiency, Meneses-Jácome et al. [28] did a literature review on

energy recovery from agro-industrial wastewaters in Latin America. They also identified a lack of efficient wastewater technologies and energy policies that stimulate the use of this kind of energy.

When discussing the role of energy in development in Latin America, addressing the Venezuela case is a must. Venezuela is one of the most important countries in terms of energy, since it holds some of the world's largest reserves of oil, natural gas and coal. More than a third of the primary energy produced is for domestic consumption (of which about a half is wasted due to technological and operational inefficiencies); the rest is exported and represents a relevant element of the Venezuelan economy. On the other hand, the high availability and dependence of primary energy sources narrowed the development of other resources, such as renewable ones, even with good conditions to solar, wind and water power, as well as biogas [29].

Robalino-López et al. [30] studied the conditions in which Venezuela could approach the fulfillment of the EKC hypothesis (i.e. the inverted U shaped relationship between income per capita and pollution) in the medium term (2011–2025), since its energy matrix is based on fossil fuels, which are highly polluting. The model estimates indicated that Venezuela did not support the EKC hypothesis in any of the scenarios projected. Pollution increase with the GDP growth per capita (positive relationship), however, the environmental damage did not decline as expected in accordance with the EKC hypothesis. Despite this, the authors argue that Venezuela may reach environmental stabilization in the medium term if it changes its energy matrix by increasing the presence of renewable energy sources.

In Brazil, which is one of the industrialized countries with the cleanest energy matrices, Pao and Fu [31] examined the causal relationships between the real GDP and four types of energy consumption. Their study identified a long run equilibrium between real GDP and the four types of consumption, suggesting that an expansion in renewable energy could lead Brazil to a leading position in the international scenario.

Regarding Argentina, the third largest economy of Latin America in terms of total GDP, despite its high potential for renewable energy due its favorable conditions to solar, wind and water power and biofuels, its estimated share of energy generated from renewable sources is only around 2%. Some factors that compromise the expansion of the renewable energetic matrix of Argentina are economic instability, stringent importation regulations, state subsidies for traditional energy sources and lack of state funding to supply the rural population with electricity. These conditions represent constraints to future development opportunities of the country [32].

Despite its importance to development, sometimes the implementation of energy systems may lead to conflicts arising mainly from an unequal wealth distribution. For example, the expansion of the hydropower sector in Colombia provoked struggles between social agents, including armed ones (e.g. destruction of energy transmission towers), due ecological distributive conflicts such as rural versus urban populations (e.g. rural populations are expropriated from their territory for the installation of hydroelectric dams while urban populations benefit from high quality energy services at a low cost). Thus, populations directly affected by energy development must be invited to participate in energy planning and policies as a way to mitigate these conflicts and promote fair energy distribution [33].

Moriarty and Honnery [34] pointed out that the strong relationship between global production and energy consumption will continue in the future, but alternative energy generation is growing so slowly that it may not be sufficient to prevent global climate change. Nevertheless, based on the literature review, we concluded that, as the energy industry is related not only to the economic development of the countries but also to the well-being of the population, investments and policies in this sector must take into account the increasing need for a sustainable development. The way energy companies contribute to the development of their respective countries/regions is the focus of the present study.

Table 1
Number of companies of the sample.

Country	2012	2017
Brazil	42	42
Chile	22	23
Argentina	3	5
Colombia	3	3
Peru	13	13
Mexico	1	1
Total	84	87

3. Data and method

In order to identify the companies of the energy industry in Latin America, we consulted the Economatica database. Based on the North American Industry Classification System (NAICS), we selected all the companies listed that operate with energy generation, transmission or distribution. For comparative purposes, we collected data from two periods, with a difference of five years between them (2012 and 2017); therefore, we can analyze whether the number of development-related words is increasing/decreasing over time. Annual sustainability reports were downloaded from the website of each company. Table 1 summarizes the number of companies that have a sustainability report for each year.

After downloading the annual sustainability reports, we conducted the content analysis based on a list of 61 development-related words, available in Appendix A. These words were selected after a comprehensive literature review on references related to development (mainly: [7,9,15,35]). For example, based on Sen [7,p. 3], we can find that “development requires the removal of major sources of unfreedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or overactivity of repressive states”. These considerations motivated the inclusion in Appendix A of words such as tyranny, poor, opportunity, development, intolerance, deprivation, poverty, and public facilities. Moreover, Malaquias and Albertin [9,p. 4] state that “the application of technology in rural areas represents an important factor to promote human, social and economic development”, which motivated the inclusion of the words technology and rural in Appendix A. The following quotation also reinforces the inclusion of the word “rural” in Appendix A: “Further, energy access is predominantly a rural problem. 1.1 billion (out of 1.3 billion or 85%) lacking electricity access are found in rural areas” [15,p. 263]. Therefore, Appendix A is comprised of development-related words selected after the analysis of the mentioned references.

Initially, we analyzed a subsample of 10 annual reports in order to check the suitability of the word list and adjust its final version, as reported in Appendix A. Then, we conducted the content analysis of the full sample, comprising 171 annual sustainability reports (84 from 2012 and 87 from 2017) based on word frequency. These annual reports refer to 93 companies. The analysis of annual reports using the frequency of words has been used in recent academic studies such as Yekini et al. [36] and Loughran and McDonald [37].

The annual reports of the sample are available in three different languages: Brazilian Portuguese, Spanish and English. Therefore, the words/terms in Appendix A were translated into Brazilian Portuguese and Spanish before the analysis. First, we registered the frequency of each word in each report (variable: No.-Words). Then, we added a filter, restricting the search to the frequency of terms within sentences directly related to development (variable: No.-Words-Dev). As the variable “No.-Words” presents a considerable degree of variation (for example, some companies have less than 10 of these words in their annual report and others have more than 1000), we also calculate the natural logarithm of these two variables, in order to avoid some concerns with extreme values in the quantitative analysis. The labels of

these two new variables are: “No.-Words (NL)” and “No.-Words-Dev (NL)”. Based on the data collected, our analysis was segregated in two main parts (one, mainly quantitative, and the other, mainly qualitative).

Part A: based on the number of words related with development and used in a context directly related with development, we obtained the number of words related to development in each company. We analyzed this number using descriptive statistics and regression analysis, since we aim to investigate two potential determinants of this variable: firms' size and time. In the regression analysis, two quantitative models were considered. In the first, the dependent variable is the natural logarithm of the number of words according to the list available in Appendix A (we calculate the natural logarithm in order to avoid some concerns with extreme values). In the second model, the dependent variable is the natural logarithm of the number of words in sentences directly related to development, also according to the list available in Appendix A. *Part B:* we selected and analyzed some parts of the reports in which companies clearly highlight their contribution to the development of their surrounding region. We summarized a set of initiatives in a table (Table 4); these initiatives are also discussed in the result analysis.

4. Results

In the first step of the analysis, we analyzed the words from Appendix A with the highest and lowest frequency in the annual sustainability reports. The five most frequently cited terms were: development, profit/profitability/income, security, social, and sustainability. These five terms presented the highest frequency in both years of the sample period (2012 and 2017). This result indicates some concern of companies in providing information related to profitability and also with sustainability, since this kind of information could be important for external users of financial reports.

Regarding the words with the lower frequency, five words did not appear in the annual reports of 2012 and 2017: authoritarian, deprivation, epidemic/epidemiological, intolerance, and tyranny. Additionally, the frequency of the following three words was zero in the annual reports of 2012: illiteracy, inequality and public facilities. On one hand, these results related with the highest/lowest frequency of words are in line with the content of the kind of annual report selected in this study, since these reports address sustainability, development and social issues. On the other hand, these initial results show opportunities to improve arguments about the benefits of energy companies in aspects related to inequality and illiteracy, as well as to public facilities.

Table 2 presents the descriptive statistics of our study database. These statistics are segregated per year, in order to indicate potential effects of time on the content of the annual reports. The results reported in the table suggest an increase, from 2012 to 2017, in the number of

pages, number of words and in the number of words in sentences specifically related to development.

According to results in Table 2, energy companies use a considerable number of expressions related to development in the presentation of their sustainability reports. Some examples of these expressions include (the words in parentheses are in Brazilian Portuguese): health (*saúde*); inclusion (*inclusão*); rural (*rural*); education (*educação*); water (*água*); corruption (*corrupção*); security (*segurança*); nutrition (*nutrição*); and opportunity (*oportunidade*). The average is around 469 words in 2012 and 539 words in 2017. Regarding the frequency of words about development in sentences directly related to development, the average is around 9 words in 2012 and 10 words in 2017.

Regarding the results of the regression analysis (Table 3), company size presented a positive effect on the number of words related to development in both measures considered: “No.-Words (NL)” and “No.-Words-Dev (NL)”. This result indicates that the traditional antecedents of accounting disclosure also seem to present a significant effect on the content about development available in sustainability reports of energy companies. The difference in word frequency between the two years was also significant for both variables ($p < 0.05$ in both cases).

These findings are in line with previous studies that documented a significant, positive relationship between firm size and corporate social responsibility practices, including disclosure level. The underlying explanation for this evidence is that large firms usually have more resources available to spend in socially responsible activities that contribute to development, as well as to communicate it to the public. In addition, large firms are more subject to pressures from stakeholders to adopt a satisfactory socio-environmental performance, so that disclosure is a priority for building the company's image [38–40].

Based on the results of the qualitative approach, we identified some initiatives that contribute to development conducted by energy companies. Table 4 indicates some of these initiatives.

Some initiatives are related to projects that promote local development, income generation and social inclusion [41]. Regarding education, projects involve partnerships with government to engage teachers and students in initiatives to improve the quality of life of students and promote citizen formation and safe/conscious energy consumption, as well as preservation of natural resources [41,42]. Some programs also include individuals with intellectual disabilities in the job market [42]. Projects also encourage women to participate and stay in the companies' staff; incentives involve different kinds of benefits, such as follow-up during pregnancy and post childbirth, follow-up of the child during the third initial months, and childcare assistance [43].

There are some programs to improve access to energy in rural areas, and these projects are expected to benefit more than 200,000 people. These programs also contribute to the reduction of poverty in rural areas, in line with some governmental initiatives [43]. Eletrobras [44] develops a program that offers development opportunities for the entire

Table 2
Descriptive statistics of the database, per year.

Variables	Year: 2012					Year: 2017				
	Obs.	Mean	Std. dev.	Min.	Max.	Obs.	Mean	Std. dev.	Min.	Max.
No.-Pages	84	123.43	77.36	11.00	412.00	87	134.86	98.28	12.00	563.00
No.-Words	84	468.56	333.27	0.00	1379.00	87	539.15	390.32	15.00	2096.00
No.-Words-Dev	84	8.94	5.70	0.00	20.00	87	9.98	5.14	0.00	24.00
No.-Words (LN)	84	5.74	1.24	0.00	7.23	87	6.00	0.90	2.77	7.65
No.-Words-Dev (LN)	84	2.02	0.89	0.00	3.05	87	2.23	0.69	0.00	3.22
TotalAssets (LN)	80	13.96	1.96	7.03	18.67	83	14.00	1.97	6.17	18.70

Notes: No.-Pages: number of pages of the annual report; No.-Words: number of words according to the list available in Appendix A; No.-Words-Dev: number of words in sentences directly related with development, following the list of words available in Appendix A; No.-Words (NL): natural logarithm of the variable No.-Words; No.-Words-Dev (NL): natural logarithm of the variable No.-Words-Dev; TotalAssets (NL): total assets of the firm at the end of the respective year (2012; 2017). We calculate the natural logarithm of these three variables (No.-Words; No.-Words-Dev; TotalAssets) in order to avoid some concerns with extreme values in the quantitative analysis.

Table 3

Potential determinants of the number of development-related words.

Variables	No.-Words (LN)				No.-Words-Dev (LN)			
	Coef.	Std. err.	t	P > t	Coef.	Std. err.	t	P > t
TotalAssets (LN)	0.313359	0.035	8.860	0.000	0.230913	0.026	8.730	0.000
Year (2017)	0.303571	0.138	2.200	0.029	0.219799	0.103	2.130	0.035
Constant	1.322640	0.504	2.630	0.009	-1.215285	0.376	-3.230	0.002
Adjusted R ²	33.5%				32.8%			
Observations	163				163			
Mean VIF	1.0				1.0			

Notes: Dependent variables: No.-Words (NL): natural logarithm of the number of words according to the list available in Appendix A; No.-Words-Dev (NL): natural logarithm of the variable number of words in sentences directly related to development, following the list of words available in Appendix A. Independent variables: TotalAssets (NL): total assets of the firm at the end of the respective year (2012; 2017); Year(2017): this is a dummy variable, that receives 1 for the observations from the year of 2017 and 0 for the observations of the year of 2012. Mean VIF: mean of the statistics for variance inflation factor. We calculate the natural logarithm of three variables (No.-Words; No.-Words-Dev; TotalAssets) in order to avoid some concerns with extreme values in the quantitative analysis.

production chain of about 26,000 rural family farms, in order to create a sustainable productive matrix. Some actions involve diversification of crops, organic agriculture, technical assistance and rural extension network, family agriculture and rural tourism.

Social projects also benefit people (7000+) who live in poor communities [45]. CESP has also innovative initiatives involving ecological gymkhana, environmental training, campaigns, environmental audits, and social security orientation for people who lives in rural areas [45]. Some companies also encourage sport activities in the communities in which they operate. An example is Equatorial Energia [46], which supports projects that benefit about 700 children and adolescents with sports such as judo, table tennis, basketball, among others.

Regarding the Indigenous Community, annual reports usually state a contribution to a specific community as an environmental compensation due to the interference that some energy firms cause in the region where the community is installed. These projects also consider ethnicity characteristics of each community before implementation. These projects, previously approved by the National Indian Foundation of Brazil (FUNAI), involve initiatives about environmental programs.

In face of this, the results were consonant with previous research findings that have already demonstrated the potential of energy for the development of the economic, social and human dimensions, such as Spalding-Fecher et al. [10], Kanagawa and Nakata [1], Khandker et al. [4], González-Eguino [5], Wang et al. [14], among others, discussed in the course of this study. We found evidence that energy firms in the

Latin American energy industry are engaged in activities that contribute to development in these three dimensions and communicate them in their annual sustainability reports.

5. Conclusion and policy implications

The objective of this study was to identify the frequency of words about development on the sustainability reports of Latin American companies of the energy industry. We collected data and sustainability reports from Latin America public companies of the energy industry in 2012 (84 firms) and 2017 (87 firms). We conducted a quantitative analysis in order to identify potential determinants of development words in firms' reports. A qualitative analysis allowed a deeper understanding about the subject.

The results indicated that large companies tend to use more words related to development in their sustainability reports. It suggests that large firms may have more resources to invest in social responsible initiatives and that large firms can present more information on their reports due to pressures from stakeholders and external users of the financial information [38–40]. However, other alternative explanation is that large firms also have more resources that allow them to organize and present all their relevant initiatives in the annual reports.

Based on the quantitative analysis, the results also showed that the number of development-related words tend to increase over time. In the qualitative analysis, energy companies performed various development

Table 4

Reported practices that may contribute to development.

Subject	Firm	Practice
Education	Enel Costanera (AR)	Organizes community visits to company facilities for educational purposes, professional development and community integration.
	Neoennergia (BR)	Provides a distance education platform that offered 27,662 h of training for 6258 people in 2017.
	AES Gener (CH)	Supports English courses in all public and private schools in the communes of Tocopilla and Mejillones (Chile).
	Intercolumbia (CO)	Employees receive a recognition for education assistance for each child of active workers and pensioned personnel.
	Iberdrola (ME)	Offers internship and mentoring programs for technical and university students.
	Enel Peru (PE)	Constructed a classroom to improve education conditions for children in Vítoc (District, Peru).
Social inclusion	Celesc (BR)	Prioritizes internship program positions for teenagers living in orphanages and other similar institutions.
	Enel Chile (CH)	Promotes the labor participation of teenagers with physical disabilities.
	Isagen (CO)	Develops a corporate volunteer program with participation of 246 volunteers in Medellín (Colombia).
Health	Edenor (AR)	Supports a NGO that provides health, education and food to more than 1150 children from poor families.
	Eletrobras (BR)	Promotes activities related to healthy eating, sports, vaccination campaigns and awareness of physical and mental illness.
	Saes (CH)	Promotes activities related to health, sports and recreation with the participation of more than 200 employees.
	Celsia (CO)	Promotes programs regarding life and accident insurance, health insurance, prevention of alcohol and drug consumption, preparation for retirement and occupational health.
	Enel Piura (PE)	Promotes nutrition campaigns with children to prevent anemia, conducting clinical exams.
Environmental issues	Pampa Energia (AR)	Conducted afforestation in the green spaces of the Mano Amiga School garden, in Pilar, province of Buenos Aires (Argentina).
	Equatorial (BR)	Settled a socio-environmental project that allows the exchange of recyclable waste by discounts in the electricity bill.
	Colbun (CH)	Created a botanical center with 4.2 hectares dedicated to the preservation of the local flora and care with the environment
	Electro Dunas (PE)	Conducted training courses on health and environment issues to employees.

Notes: (AR) Argentina; (BR) Brazil; (CH) Chile; (CO) Colombia; (MX) Mexico; (PE) Peru.

activities, such as educational projects, economic and social local development, income generation, environmental protection, inclusion of minorities, among others, as summarized in Table 4. Some examples of these initiatives include socio-environmental projects (i.e. discount in electricity bills to incentive an adequate discard of recyclable waste), training courses/activities (for employees and for the community), the preservation of local flora through a botanical center, among many others.

The main advancement of this study is to highlight the contribution of energy companies from Latin America to different dimensions of development. We expect that this study provides insights for policy-makers on the role of Latin American energy firms in the development of communities in which they are inserted, beyond the simple economic aspect, in terms of wealth generated to its shareholders and the way such activities are communicated to them. This is particularly relevant if we consider that energy is strongly related to human development.

It is interesting to note that companies addressed aspects related to the indigenous community in their annual reports, which include environmental compensation due the impacts generated by firms. However, based on our level of analysis, this content could be expanded to include other levels of contribution that these firms can bring to the indigenous communities. Future avenues of investigation may concentrate on increasing this analysis with firms from other sectors, which, due their own operational characteristics, have a strong impact on the environment of communities where they operate, in order to identify how companies address these issues in their sustainability reports.

Regarding the use of the frequency of words as a proxy to identify initiatives related to development, it may represent a limitation of this study, since there are some outcome measures (such as life expectancy and rates of diseases) that could be affected by the effective contribution of companies to their local regions. Therefore, further research can expand the results of this study by contrasting the frequency of words with official indexes of development, considering different countries and periods.

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Appendix A

List of words considered in the analysis of annual reports

Agroindustry; Authoritarian; Clothed; Corruption; Deprivation; Development; Economic; Education; Educational; Elections; Epidemic; Epidemiological; Exclusion; Financial; Freedom; Health; Human; Hunger; Illiteracy; Illiterate; Illnesses; Inclusion; Income; Indian; Indigenous; Inequality; Intolerance; Misery; Modernization; Nutrition; Opportunity; Order; Peace; Policy; Politics; Poor; Poverty; Production; Profit; Profitability; Progress; Public Facilities; Public Resources; Rich; Rights; Rural; Sanitary; Security; Sheltered; Social; Speech; Sustainability; Sustainable; Technology; Trade; Tyranny; Water; Wealthy.

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