

The Challenges in Communicating About Environmental and Economic Attributes of Electric Power Projects

Ana Lúcia Rodrigues da Silva, and Fernando Amaral de Almeida Prado Junior

Sinerconsult, Brazil

Abstract: As is well known, electricity generation, transmission and electric power distribution are not neutral with regard to their social and environmental impacts. Extensive bibliography has usually been published in these fields of knowledge. Benefits, negative results, licensing, compensation strategies and mitigation have been some of the aspects analyzed in the literature. This article presents in its initial section a quick bibliographic review of the main themes involving this context. However, a fundamental point is the lack of wide disclosure of the counterpoint between benefits and negative results that these projects may bring to society, including the different sector agents and opinion makers. It is not enough for the results to be public and available for consultation, if in many cases the complexity of their results is associated with the technicality of their language that does not allow their dissemination to all agents who could benefit from their results, democratizing the general access of society on these projects. Faced with this challenge, the present paper introduces the experience developed in the scope of the R&D project called “Energy Matrix and Improvement of Environmental Insertion Systematics in the Expansion Planning of the Electric System (SINAPSE Project)”, where since its conception and formation of the research team, activities and products were contemplated to communicate in a broad and unrestricted way the results of the project to the different agents of the society. The theoretical basis of this work includes the concepts of Integrated Marketing Communication, Communication Plan and Advocacy. While Integrated Marketing Communication demonstrates the importance of organizations passing on the same message in the most different means of communication used, the Communication Plan brings together the set of actions and products that will disseminate this information to the different recipients. Finalizing the theoretical basis, the concept of Advocacy contemplates the use of specialists to disseminate technical concepts, facts and actions to society in general. From the understanding of these concepts, the chosen case study (the R&D project itself) highlights the importance of having an Integrated Marketing Communication and its Communication Plan structured within an energy project and how this plan helps in the democratization and dissemination of results for society as a whole and for sector agents who also benefit from access to research results. The concept of Advocacy is also exemplified as experts will be involved in explaining technical concepts to non-specialist audiences. The paper also presents practical examples of products developed in the Communication Plan of the SINAPSE Project, which include: thematic notebooks developed throughout the different stages of the project, videos aired in social media, its homepage that consolidates and helps in the dissemination of concepts and results of partial products of the project, the realization of workshops on knowledge transfer during the life of the project and concluding the technical book for experts developed during the execution of the project. These five products illustrate the products developed for the differentiated service of the different segments of society that are considered target audiences of this R&D.

Key words: communication, R&D projects, marketing, disclosure, sustainability

1. Introduction

This paper consolidates the integrated marketing communication developed in the R&D project called

“Energy Matrix and Improvement of Environmental Insertion Systematics in the Expansion Planning of the Electric System (SINAPSE Project)” executed in the scope of the Research and Development Program of the National Electric Energy Agency (ANEEL), registered as APLPED06961_PROJETOPED_0006_S01, which has as main objective to improve the systematic insertion of the environmental variable in the planning

Corresponding author: Ana Lúcia Rodrigues da Silva, Post Doctor in Energy System Planning; research areas/interests: energy, marketing, communication, consumer behaviour. E-mail: ana@sinerconsult.com.br.

of the expansion of electric generation in Brazil. This project brings together 8 sponsoring companies and five executing entities¹.

The paper presents the challenges in the communication about environmental and economic attributes of electric power projects. As is evident in practice, information and communication are different words and concepts. The excess and abundance of accessible information nowadays, with different means and forms, does not indicate that these are in fact communicated and absorbed by society in general. Without effective communication, all and any information ends up not being effectively disseminated.

Through the detailing of several concepts related to communication and its effectiveness, the paper approaches the classic marketing concepts related to business communication, such as Communication Composite; Integrated Marketing Communication; Integrated Marketing Communication Plan and the Advocacy Concept.

After this theoretical foundation, the communication strategy and the products generated for the specific case of the SINAPSE Project are presented, as well as the expected results with this initiative.

2. Integrated Marketing Communication (IMC)

Integrated Marketing Communication was one of the theoretical pillars used to guide the Communication Plan of the SINAPSE Project, whose main challenge was to present the importance of the environmental variable in the new directions of the Brazilian electricity sector. It is believed that IMC helps in the need to transmit the same information to different

target markets, integrating for this purpose the traditional media and the new digital communication channels.

According to Dias (2003) [1], “integrated marketing communication, or communication compound², is one of the four areas integrating the marketing compound, the P for promotion, and covers the set of integrated actions of communication and promotion.”

According to Ogden (2002) [2], the communication mix can be composed by public relations and publicity; direct marketing; propaganda; personal sale; Internet marketing and sales promotion. Normally the companies opt for the joint use of several elements of the communication mix. The coordinated and systematic use of these tools is known as Integrated Marketing Communication (IMC).

The objectives of IMC may vary according to the needs of the company, the life cycle of its products and services, and other numerous aspects. Dias (2003) [1] exemplifies some of the possible objectives of IMC:

“To fix the product in the consumer’s mind; to create a unique, consistent, understandable and credible message about the product; to build a differentiated and sustainable brand image in the consumer’s mind; to offer information and incentives for the consumer to acquire the company’s product or service; and to generate a favorable attitude from the several public segments for the company’s initiatives”.

It is essential that the message or information to be transmitted is properly coded for the different elements used, always maintaining coherence and consistency of values and ideas. This synergy will contribute to the effectiveness of the communication process, ensuring that the receiver will obtain and absorb the desired and correctly codified information.

Regardless of the quantity of elements used in the communication process, it is fundamental to manage the communication strategy in a cohesive way. The need for an integrated communication strategy results

¹ The Sponsoring Entities of this project are: CANDEIAS, CEMIG GT, ITIQUIRA, POTIGUAR, CERAN, FOZ DO CHAPECÓ, MANAUARA and ENERCAN. While the Executing Entities of this project are: MRTS Engineering Consultancy Ltda, NTJ TEC Engineering Consultancy, Diversa Sustainability Consultancy Ltda, COPPETEC and SINERCONSULT Foundation — Consultancy, Training and Participations Ltda.

² The traditional Marketing Compound includes the 4 P's: Product, Price, Square and Promotion.

from the recognition that meeting the objectives of marketing communication will be more successful if all the elements of the communication program are coordinated and integrated in order to create a unique, differentiated and consistent position, message or images in the mind of the target recipient of the campaign [1].

The phases involved in communication management are [3]:

- Definition of the communication objectives: in this stage, the information and messages that must be communicated and who are the recipients of the communication must be defined.
- Choice of the communication compound: it is up to the company to identify which communication elements are more pertinent to disseminate the desired information and messages. This choice must also consider the nature of the market receiving the message and its preferences, the nature of the product/service or idea/concept that needs to be communicated, in addition to corporate strategies for market expansion or retraction.
- Definition of the communication budget: the budget allocated for communication is a determining factor for the choice of elements and strategies that will be adopted. In traditional situations of product sales, the budget decisions can be associated even with the percentage of sales of the same, fixed value per unit or even the practice of the competition. Another way used to define the necessary budget is based on the Objective and Task. In this case the communication objectives are initially defined, the tasks for each element of the communication compound, the cost of each task and the sum of these costs determine the budget.
- Implementation and control of the communication strategy: the implementation

consists in the adoption of the actions foreseen in the Communication Plan, while its control is normally carried out by following indicators that reflect the achievement of the desired objectives in the implemented communication. These objectives may include, among other alternatives, increased sales, knowledge about specific information, changes in preferences, among others. Second [2], several activities can be developed in the process of evaluation and control of communication effectiveness, including: focus group meetings, feedback spreadsheets and statistics. The responses of the target market allow the evaluation of the continuity of actions or the need for revision at IMC.

The Marketing Integrated Communication Plan, when applied to dissemination of ideas and technical concepts, is more effective when supported by technical and scientific information associated with the positioning of experts. To this end, the concept of Advocacy is the second theoretical tool used as the basis for the Communication Plan of the SINAPSE Project.

3. Advocacy Concept: Conceptual Outline

This section presents the main concepts and evolution of academic thinking in relation to the strategy of defense or opposition to a particular theme, policy or project. Generally speaking, the structured positioning is called Advocacy.

Advocacy strategy is one that seeks, usually through structured actions (texts, articles, web sites, events, lectures, interviews, among other mechanisms of interaction with the target audience), to gain sympathy and support from society towards a belief, public policy goal or project. Eventually, advocacy strategies can be built for actions of opposition to a certain theme.

According to Lackey (2007) [4], Advocacy is the set of actions of active, hidden or inadvertent support to a policy or class of policies. These actions are structured

based on relevant facts that justify the positioning for which support is sought.

To build these strategies, many of which are structured in the form of texts, there are some basic steps:

- Knowledge availability on the subject.
- Introduction that clearly addresses the theme on which the position defense is sought.
- In the sequence, we use the deepening of the available knowledge and the presentation of the details that justify the cause to be defended.
- When written references are developed, texts, blogs, presentations in the form of slides, they should contain quotations, facts and figures (indicators).
- The material produced must contain an “emotional” appeal with general reasons why society should agree and support the causes advocated.
- The information used to build the cause to be defended should be supported by bibliographic or factual references.
- The author and/or presenter should provide contact information to enable their audience to interact later.

3.1 Institutional Positioning - Abuses and Other Force Options

Advocacy activities are not always “welcome” by official state institutions, especially when they go against government positions or power group interests. Obviously, the more consolidated institutions of freedom and democracy, the less active may be the actions of boycott and/or structured and institutional opposition to Pressure Groups that defend a certain cause. However, even in admittedly democratic countries such as the U.S. and Canada there are records and abuses against groups that promote environmental advocacy [5-7].

An article published by the International Center for Not-for-Profit Law [8] identifies which official entities

and/or countries, in an attempt to obstruct groups’ positions for environmental activism (advocacy), can:

- Criminalize legitimate activism.
- Label environmental groups and pressure as foreign agents, restricting international cooperation in defense of a particular cause.
- Impose bureaucratic and difficult requirements in legislation to inhibit the positioning in defense of a cause.
- Restrict environmental defense activities.
- Impose illegal surveillance on activities of groups that defend agendas contrary to the interests of organizations and/or states.
- The literature is full of examples of these attitudes, where they stand out:
- In Chile, in 2013, the Mapuche Indians were framed in laws against terrorism for the defense of lands where they lived since ancient times [9]. The same happened in Canada with activists opposed to gas and oil exploitation, and they were also framed in laws against terrorism [5].
- In Australia laws against protests were created with high fines for NGOs and individuals, ranging from A\$ 7,000 to A\$ 72,000 [10].
- In Bolivia, Non-Governmental Organizations were accused of representing ‘international imperialism’ for using financial donations from NGO contributions [8, 11].
- In several cases visa revocation promotes the expulsion of foreign activists, as occurred in Cambodia in 2015 [8].
- In the US and Canada, illegal investigations have been registered on people and entities under the allegation of ecoterrorism [6, 7]. Abuses of police power have also been registered in Russia [12].
- In Brazil there have been cases of violence uninhibited by the police apparatus against environmentalists, with more than 400 deaths in 2014 [13].

- Examples and institutional violations have also been observed in India and Colombia, in addition to the examples already mentioned [14].

3.2 Civil Society Involvement in Advocacy Strategies

Under the assumption that the defense of a position, thesis, project, or policy has a determined audience that amplifies it and ends up influencing decision-makers, facilitating or hindering the achievement of the objectives that the defense of a certain issue had as a principle.

Thus, it is possible to see that the adhesion of civil society can make a difference in emblematic issues, so for this reason, many emblematic projects involve opinion-makers, even if they are not specialists. An example of this process can be found in the clash of opponents of the Belo Monte plant³, where it counted with the participation of great names of Brazilian art criticizing the project [15]. The campaign was promptly refuted by engineering students at Unicamp, who pointed out that the support position was developed by more prepared people who had studied, in an attempt to disqualify opinion-forming artists [16].

While some advocacy groups may make use of influential people to garner support, in an environment less politicized and less susceptible to the influence of “celebrities”, advocacy strategies to gain the support of civil society should include [17]:

- The use of experts for advice and analysis.
- Provide governments with more agile intellectual capacity and better conditions for study and analysis than those provided by government bureaucracy.
- Best practices for mobilizing support from public opinion advocating for environmental justice.

- Occupy the representation of the “voiceless” part of society, i.e., the hyposufficient.
- Promote the development of studies and information gathering that can instrumentalize public discussion procedures (public hearings, for example).
- Support and legitimize the mechanisms that allow a fair and impartial decision-making process.
- Structure mechanisms to monitor and supervise committed policies.

3.3 Positioning of Advocacy Advocates

The literature is very comprehensive of positions regarding the ethical reasonableness of Advocacy strategies. Another point of great importance concerns the participation or not and also how this participation occurs on the part of the agents that develop the technical basis of this strategy, especially the participation of scientists and/or specialized professionals. It is worth mentioning that even when questioning the ethical aspects of Advocacy, it is taken for granted that it occurs in the most diverse dimensions of defense of a given cause.

The point of interest in the conceptual discussion of the participation of these specialists concerns aspects of objectivity of science, while the defense of a positioning involves subjective issues, political positioning and eventually emotional involvement.

Several authors consider the participation of scientists in the development of these strategies inadequate. According to McCoy (1996) [18], scientists should not be concerned with the formulation of hypotheses nor with the consequences of their investigations, which does not happen when research aims to demonstrate or defend positions that can be considered subjective. Kaiser (2000) [19] argues that statements that can be considered “enthusiastic”, given an environmental position, do not match the practice of good science. Considering that often the technicality of the subject needs to be better explained to a broader

³ Belo Monte plant is the third largest hydroelectric plant in the world. Between its conception and start of operation, it was more than 35 years, where there were processes of reformulation of the project aiming to reduce the flooded area.

audience of the interest group, it is possible that simplifications produce poor dissemination of results that should be scientific in nature. Along the same lines [18] advocates that science should be neutral and that Advocacy would produce ideological contamination. He also argues that advocacy by pressure groups related to work that has funding lines can influence the researcher to adopt theses of the sponsor.

Other authors consider that the ethical way of knowledge transfer that can be used by society should only occur through publication in scientific books and/or magazines, recognizing, however, that this process is very slow [20]. These same authors argue that Advocacy is not a process that can be neutral and, therefore, inadequate for scientists who can never be partial in seeking knowledge with scientific evidence.

The book *Merchants of Doubt* [21] presents evidence that famous scientists put their curriculum at the service of corporations to defend biased theses of interest to the funder of their research.

On the other hand, some references defend that scientists and specialized professionals can act as activists, because they are, first of all, citizens and as such can and should exercise their citizenship [22, 23]. If these experts shy away from the debate, policies will inevitably be developed by the least prepared. Technical preparation and analytical power represent the contribution of these experts to citizenship, so scientists must participate and influence [22, 24]. The limits of objective and subjective criteria are dubious, science can lend knowledge to better understand this separation [19].

The ethical dimension also appears in advocacy activities that use economic concepts. The use of cost-benefit analyses is criticized [25] when the cause to be advocated can produce damage to health, safety or consider risks whose potential damage is so high that any repair is unjustifiable or unfeasible. Constanza (1991) [26] argues that economic analyses of causes to be defended should analyze the effects of that cause or policy on local, regional, and/or global dimensions. In

the first case, disputes involving local pollution can be used as an example; in the second regional impacts can be exemplified as acid rain in the Northern region of the US and regions bordering Canada and the third global dimension can be referenced with Climate Change. The analyzes, thus developed, still need to take into account the uncertainties and long-term impacts. Erickson (2005) [27] has identified a growth in the importance of moral and ethical analyses in Advocacy arguments that make use of economic studies to defend a position. This author evidences that ethical aspects make people's behavior not exclusively of economic rationality.

Experts evidently need to use their knowledge to level the relevant information to a wider audience. Parsons, DellaSala, and Wright (2015) [28] recommend that the relationship between experts and activists in general be marked by

- A Respectful relationship.
- Evaluation of opposing arguments even if they are based solely on emotional rather than technical concepts.
- Act as a source of information facilitating the knowledge that the other party needs.
- Suggest bibliographic material to help build knowledge and/or specific skills.
- Use accessible and didactic language for audiences of other specialties.
- Accept as a premise that 100% consensus may not be possible.
- Invest in the relationship with social media and scientific journalists.

The recent Nobel Laureate in Economics, Richard Thaler, in his book *Misbehaving- The Making of Behavioral Economics* [29], analyzing the strategies developed by Cialdini (2018) [30], identifies that to be successful in convincing that a procedure or cause is appropriate, it is necessary to inform the target audience that many other people (or countries) agree and that they have already lent support to the issue. This strategy is based on the Connection Principle, i.e.,

there is a greater probability of supporting a cause with theses about which people or groups similar to those to whom one belongs agree.

Finally, it is worth mentioning Mary Douglas's paper [31] on cultural risks, where it is clear that societies select some themes to debate, being these themes endowed with risks and that need allocation of responsibilities. Douglas identifies that perceived risks depend on moral and ethical principles and also on the relative position of the human being in society. In short, the belief about risks and consequently potential opposition to a cause depends on cultural factors and the involvement (or economic or physical proximity) of a certain public to the cause.

3.4 The Future of Environmental Advocacy in the Face of Changing Environmental Activism

The new environmental activists believe that the strategies and political actions are outdated and that there is a need to rethink the direction of the causes of environmental defense [32, 33].

They argue that the strategy has not changed in the last 40 years, being essentially the fulfillment of stages:

- Definition of a problem (climate change, for example).
- Advocacy for a strategy (cap and trade market for emissions).
- Selling the solution to politicians through lobbying, technical reports, advertising, public relations, among others.

Advocacy for a third wave⁴ of the environmental movement, based on the prioritization of selective investments, such as for the exclusive use of renewable and low environmental impact energy and the elimination of fossil fuel use.

These authors argue that to succeed in a world connected by social media, the strategy will have to go beyond the specific interests of the cause to be defended and focus efforts on programs of general

interest, with more objectivity. For example, the discourse based solely on saving the world is no longer effective, but when it includes benefits such as the creation of new jobs with renewable energy technologies, this enhances its effectiveness.

These two theoretical sections aimed to conduct a bibliographic review of concepts linked to the defense of technical causes and how the SINAPSE project aims to develop publications on the most diverse sources of electricity generation, it is convenient that the lessons learned on Integrated Marketing and Advocacy Communication can serve as competent references to explain the choices of products developed to better communicate the results of this R&D project.

4. Regulation of Research and Development (R&D) Projects in the Brazilian Electricity Sector

The Brazilian electricity sector continuously invests in research and development projects. This practice was initiated in compliance with law no. 9,991, of July 24, 2000, and its implementation is regulated by the National Electrical Energy Agency - ANEEL. Since its beginning several improvements have been registered. The main rules in force are in ProP&D (REN 754 of 12/2016).

“The objective of the R&D Program is to adequately allocate human and financial resources in projects that demonstrate originality, applicability, relevance and economic viability of products and services, in processes and final uses of energy. It seeks to promote a culture of innovation, stimulating research and development in the Brazilian electricity sector, creating new equipment and improving the provision of services that contribute to the security of electricity supply, tariff modicity, reducing the environmental impact of the sector and the country's technological dependence” [34].

The R&D program in the Brazilian electrical sector was initiated in the cycle 1.999/2000, through the Resolution N° 284, of September 29, 1999. Throughout

⁴ The first wave was the preservation movement and the second was based on regulation.

its 19 years of existence there have been some changes in its regulation, being currently governed by Normative Resolution no. 495, of June 26, 2012 and Normative Resolution no. 504, of August 14, 2012 which approved the Manual of the Electric Power Sector Research and Technological Development Program [35].

The regulation determines that a percentage of net operating revenue (NOR) be invested in R&D programs. For Distribution companies this requirement is 0.75% of the NOR, while Generation and Transmission must invest 1% of the NOR. It is worth mentioning that the law that created this incentive also contemplates energy efficiency projects that are not part of the object of this article. The themes for investments in this program are AS — Alternative Sources of Electric Power Generation, TG — Thermoelectric Generation, BR - Basin and Reservoir Management, E — Environment, SE — Safety, EE — Energy Efficiency, PL — Planning of Electric Power Systems, OP — Operation of Electric Power Systems, SC — Supervision, Control and Protection of Electric Power Systems, QR — Quality and Reliability of Electric Power Services, MI — Measuring, invoicing and combating commercial losses.

5. The Experience of Communication of R&D Projects in the Electrical Sector — SINAPSE Case

The SINAPSE R&D Project aims to improve the system to insert, in the planning of the Brazilian electrical system, several technical-economic and socio-environmental aspects, not yet contemplated in the methodology and models of generation expansion, with emphasis on existing or planned generating sources within the National Interconnected System.

The nature of this project also involves the need for clarification with different audiences, where new players in the electricity sector, class associations, opinion makers, judges responsible for decisions

associated with the sector, and society in general stand out.

To this end, the SINAPSE project has had since its conception the focus on a Communication Plan of its results. The communication of the SINAPSE project is composed of 6 pillars, being: Visual Identity of the Project, Homepage, Thematic Notebooks, Videos of dissemination of the Thematic Notebooks, Workshops of Knowledge Transfer and Technical Book for the specialized public.

5.1 Visual Identity

The Project's visual identity was developed, as illustrated in Fig. 1. This visual identity uses different shades of green in an integrated way, which allowed the creation of a logo that demonstrates the project's main attributes: sustainability and integrated planning.

4.2 Homepage

A homepage has been developed that consolidates in a single virtual environment all the available information of the project, where they stand out: the objectives of the project, the executing companies and their respective teams of researchers, the sponsoring companies, the presentations of the technical reports developed, thematic notebooks and their videos of dissemination. The Homepage also presents news and published works about the SINAPSE Project, besides establishing a constant communication channel between the general public and the Project team. Fig. 2 presents an example of the pages available on the WEB.



Fig. 1 Visual Identity of SINAPSE Project [36].

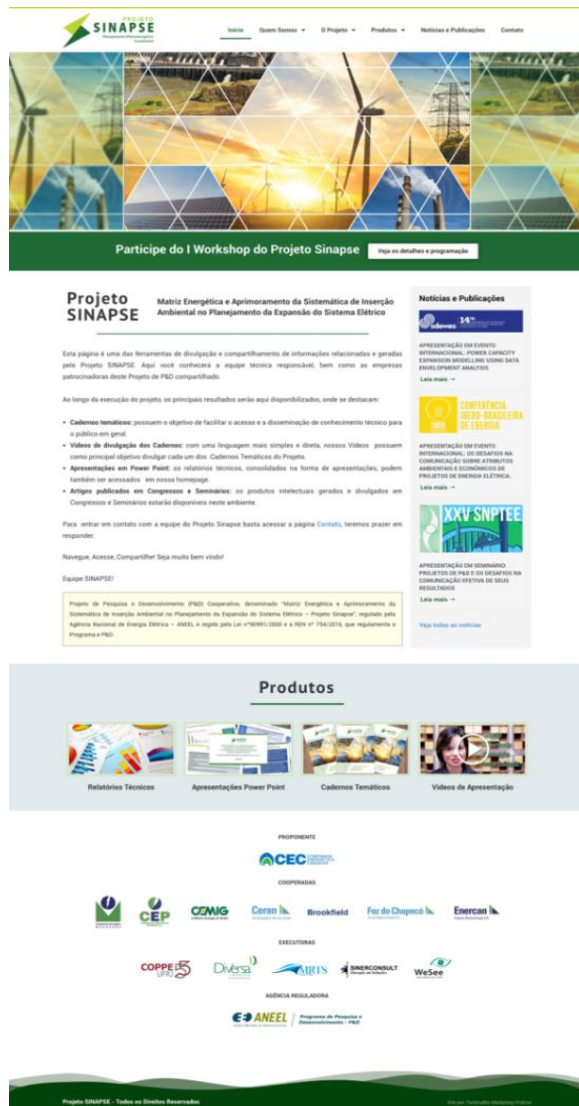


Fig. 2 Overview of the SINAPSE Project website homepage [36].

5.3 Thematic Notebooks

The thematic notebooks represent a collection of information associated with the different technical reports of the Project. They have a non-specialized language and allow an understanding by a wider audience. However, their elaboration process is complex and involves the following steps:

- Reading and analysis of the Technical Reports prepared by the different companies executing the project.

- Selection of the main topics that should be contemplated in their respective Thematic Notebooks.
- Validation of the previous selection of content with the authors of the respective reports.
- New textual construction of the prioritized subjects.
- Suggested layout to ensure the attractiveness and dynamism of the Thematic Notebook.
- Validation of the proposal with the project executing team.
- Implementation of the requested changes and elaboration of a new proposal of the booklet.
- Validation of the new proposal with the project's sponsor team.
- Implementation of the requested changes and preparation of the final version of the thematic notebook.
- Editorial Process: where the orthographic and grammatical revision of the text and its final layout are included.

The cover and the bibliographical record are also carried out at this stage.

Figs. 3 and 4 present details of the Thematic Notebooks 1 and 2.

5.4 Presentation Videos of Thematic Notebooks

Using an easy and objective language, the videos present, in a succinct way, the contents of each one of the Notebooks, inviting the reader to know them. Its



Fig. 3 Thematic notebook covers 1 and 2 [36].



Fig. 4 Examples of internal pages of the thematic booklet [36].

professional elaboration requires the construction of a script doubly validated by the project’s executors and sponsors. The elaboration of the videos also requires the hiring of a specialized company for their filming and editing, in addition to an experienced professional for the voiceover of the script developed.

As with the Thematic Notebooks, the video script, as well as its edited and illustrated version, undergo the process of double validation by the Project team and after their approval, they are made available on the YouTube channel and also on the Project’s homepage. The videos were created with the purpose of publicizing the existence of the Project and its Thematic Notebooks, as shown in Fig. 5.

5.5 Technical Book

The integrated communication of the SINAPSE Project also has a product destined to the specialized public in the subjects treated in the project. This product is a technical book that consolidates the main researches carried out, its methodologies and results.

The book is distributed free of charge with a priority focus on sector agents, higher education institutions in Engineering and Energy, in addition to graduate programs in related areas. It will also be disseminated through the project’s homepage and the Workshops for knowledge transfer.

5.6 Knowledge Transfer Workshops

Concluding the strategy of dissemination of knowledge generated during the SINAPSE Project was also idealized the realization of Knowledge Transfer Seminars. These Seminars are held throughout the



Fig. 5 Example of the call to thematic video 1.

project and also at the end of it. Their objective is to present in person, by the researchers and specialists responsible for the execution of the project, the main results and evolutions obtained during the different phases of the project.

Fig. 6 presents the invitation to divulge the Knowledge Transfer Workshop held in April 2019.

The products and strategies presented here derive from the Communication Plan idealized for the SINAPSE Project, where products and actions were contemplated both for the physical and on-site environment, as well as for the virtual environment. This integrated communication is associated to the Advocacy actions represented by both thematic videos and Workshops. The main purpose, as already mentioned, is to ensure access to the information generated by the SINAPSE Project to the different

audiences that need and benefit from it, contributing to the inclusion of the environmental variable in the criteria used to expand the Brazilian electricity system.

6. Concluding Remarks

The broad and assertive communication of R&D projects contributes greatly to democratize access to technical information and the state-of-the-art sector, which can contribute greatly to the assertiveness of decisions made. This becomes even more essential in the electricity sector as a whole. The complexity of the issues, the speed and frequency of regulatory changes, and the arrival of new sector players make efforts to disseminate R&D sector results even more important and complex.

The concepts of Integrated Marketing Communication and Advocacy presented here provide clear guidance on the importance of coherent and effective communication, always accompanied by accurate and clear information associated with traceable and reliable sources. The practice of Advocacy also recommends the inclusion of experts in the defense and dissemination of projects, causes or positions.

Based on these scientific guidelines, the SINAPSE Project, which deals with the insertion of the environmental variable in the planning of the Brazilian electricity system, has created a system of dissemination of its partial and final results. This strategy has products aimed at the technical and specialized public, including traditional reports, technical presentations and scientific books. In order to meet the needs of other agents not highly specialized in the energy area, such as journalists, judges, opinion makers, equipment manufacturers, class associations and society in general, the adopted communication plan included new products: Thematic Notebooks, Promotional Videos and Homepage. These products were based on a unique visual identity and were widely distributed both in physical and electronic media, in addition to the strategy of holding on-site technical

HORÁRIO	TEMA	PALESTRANTE
09:30 – 10:00	Café da Manhã de Boas Vindas	
10:00 – 10:15	Abertura	Rodrigo Amaral (GPE)
10:15 – 10:30	Caracterização do Projeto	Dorel Ramos (MRTS/USP)
10:30 – 11:15	Competitividade das Fontes	Marciano Morozowski (INTJ TEC)
11:15 – 12:00	Inclusão de Aspectos Sócio-Econômicos e Ambientais no Planejamento de Longo Prazo	Ricardo Furtado (Iuverca)
12:00 – 13:30	Intervalo para Almoço	
13:30 – 14:15	O Modelo de Planejamento da Expansão no horizonte de Longo Prazo (Metodologia e Especificação Funcional)	Amaro Olimpio (Coppes/UFRJ)
14:15 – 15:00	Comunicação do Projeto	Ana Lúcia Rodrigues (Sinerconsult)
15:00 – 15:15	Coffee Break	
15:15 – 16:00	Visão da EPE	Erik Eduardo Rego (EPE)
16:00 – 16:45	Mesa Redonda	
16:45 – 17:00	Encerramento	

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Fig. 6 Invitation I Workshop SINAPSE Project [36].

events such as the Knowledge Transfer Workshops held during the Project.

The maturity of the project, which is still under development, will allow the identification of the benefits and limitations of its communication strategy, which will contribute to the continuous improvement and improvement of these practices.

References

- [1] S. Dias, *Marketing Management*, São Paulo: Saraiva, 2003.
- [2] J. Ogden, *Integrated Marketing Communication: Practical Model for a Creative and Innovative Plan*, São Paulo: Pearson Prentice Hall, 2002.
- [3] J. R. Churchill and J. G. Peter, *Marketing: Creating Value for Customers*, São Paulo: Saraiva, 2003.
- [4] R. Lackey, Science, scientists and policy advocacy, *Conservation Biology* (2007) 12-17.
- [5] W. Potter, Seven ways Canadian environmental groups are being attacked as “terrorists”, 2012. Available online at Green is the New Red, accessed on 28/02/2018, available online at: <http://www.greenisthenewred.com/blog/7-ways-canada-environmental-groups-labeled-terrorists/6374/>.
- [6] P. Lewis and A. Federman, Revealed: FBI violated its own rules while spying on Keystone XL opponents, *The Guardian*, 2015, accessed on 03/03/2018, available online at: <https://www.theguardian.com/us-news/2015/may/12/revealed-fbi-spied-keystone-xl-opponents>.
- [7] A. Ross, Why is the FBI harassing tar sands protesters in Washington and Oregon, *Green is The New Red*, 2015, accessed on 03/03/2018, available online at: <http://www.greenisthenewred.com/blog/fbi-visiting-megalo-ads-protest-activists/8124/>.
- [8] International Center For Not-For-profit Law (ICNFPL), Environmental advocacy: Challenges to environmental groups’ rights to assemble, *Global Trends in NGO Law*, 2016, accessed on 29/03/2019, available online at: <http://www.icnl.org/Global%20Trends%20Vol%207%20iss%201.pdf>.
- [9] N. Eyzaguirre, Environmental 2015: Chile, 2015, accessed on 28/02/2018, available online at: <http://latinlawyer.com/reference/topics/51/jurisdiction/3/chile>.
- [10] S. Hepburn, Changes to environmental laws would defang the watchdogs, *The Conversation*, 2015, accessed on 28/02/2018, available online at: <http://theconversation.com/brandis-changes-to-environmental-laws-will-defang-the-watchdogs>.
- [11] S. Hepburn, Changes to environmental laws would defang the watchdogs, *The Conversation*, 2015, accessed on 28/02/2018, available online at: <http://theconversation.com/brandis-changes-to-environmental-laws-will-defang-the-watchdogs>.
- [12] Amnesty International, Russia: “Hooliganism” charges do not apply to peaceful Greenpeace protest, *Amnesty International*, 2013, accessed on 28/02/2018, available online at: <https://www.amnesty.org/en/latest/news/2013/10/russia-hooliganism-charges-do-not-apply-peaceful-greenpeace-protest/>.
- [13] M. Miller, Why are Brazil’s Environmentalists being murdered?, *The Washington Post*, 2015, accessed on 03/03/2018, available online at: https://www.washingtonpost.com/news/morning-mix/wp/2015/08/27/why-are-brazils-environmentalists-being-murdered/?utm_term=.9682d1b9e90a.
- [14] C. Caycedo, Activists fight privatization of Colombia’s longest river, *Popular Resistance*, 2015, accessed on 28/02/2018, available online at: <https://www.popularresistance.org/activists-fight-privatization-of-colombias-longest-river/>.
- [15] Water drop movement (Movimento Goda d’água), 2012, accessed on 03/03/2018, available online at: <https://www.youtube.com/watch?v=hZVIWvm99As>.
- [16] State University of Campinas (UNICAMP), The truth about the Belo Monte Plant: From those who studied and not actors without knowledge (*A verdade sobre a Usina de Belo Monte (De quem estudou e não de atores sem conhecimento)*), 2012.
- [17] State University of Campinas (UNICAMP). The truth about the Belo Monte Plant (From those who studied and not actors without knowledge) *A verdade sobre a Usina de Belo Monte (De quem estudou e não de atores sem conhecimento)*, 2012.
- [18] E. D. McCoy, Advocacy as part of conservation biology, *Conservation Biology* (1996) 1318-1320.
- [19] J. Kaiser, Ecologists in a mission to save the world, *Science* (2000) 1188-1192.
- [20] P. Brussard and J. Trull, Conservation biology and 4 types of advocacy, *Conservation Biology* (2007) 21-24.
- [21] N. Oreskes and E. Conway, *Merchants of Doubt*, London: Bloomsbury Press, 2010.
- [22] E. Maccarone, The moral case for scientists as advocates for environmental policy, 2003, accessed on 28/02/2018, available online at: <http://www.ohio.edu/ethics/2003-conferences/>.

- [23] Parsons, Advocacy and Activism are not dirty words — How activists can better help conservation scientists, *Frontiers in Marine Science*, 2016, accessed on 28/02/2018, available online at: <http://www.frontiersin.org/articles/10.3389/fmars.2016.00229/full>.
- [24] R. Noss, Values are a good thing in conservation biology, *Conservation Biology* (2007) 18-20.
- [25] D. Booth, Ethics and the limits of environmental economics, *Ecological Economics* (1994) 241-252.
- [26] C. Constanza, Ecological Economics: A research agenda, *Structural Change and Economics Dynamics* (1991) 35-357.
- [27] R. Erickson, On the ethics of environmental economics as seen from textbooks, *Ecological Economics* (2005) 421-435.
- [28] E. Parsons, D. Dellasala and A. Wright, Is marine conservation science becoming irrelevant to policy makers?, *Frontiers in Marine Science* (2015) 1-4.
- [29] R. Thaler, *Misbehaving — The Making of Behavioral Economics*, New York: W.W. Norton & Company, 2016.
- [30] R. Cialdini, The 6 principles of persuasion, *Influence at Work*, 2018, accessed on 05/03/2018, available online at: <https://www.influenceatwork.com>.
- [31] M. Douglas, Risk acceptability according to the social sciences, in: *Russel Sage Foundation*, 1985, available online at: <http://www.lwk-niedersachsen.de/index.cfm/portal/6/nav/1082/article/17834.html>.
- [32] M. Shellenberger and T. Nordhaus, The death of environmentalism, *Nathan Cummings Foundation & Global Warming Politics: A Post Environmental World*, 2014, accessed on 28/02/2018, available online at: <http://www.evansmcdonough.com>.
- [33] E. Hunter, Activism 2.0 — Rebirth of the environmental movement, 2013, accessed on 29/03/2019, available online at: <https://www.youtube.com/watch?v=KsB2qtDaiRw>.
- [34] Brazil, Normative Resolution ANEEL NO. 754, 13 December 2016. Approves the Procedures of the Research and Development Program — PROP&D and alters Submodules 2.7: Other Revenues and 9.1: Periodic Review of Revenues of Existing Concessionaires of Tariff Regulation Procedures – PRORET, accessed on 06/04/2019, available online at: <http://www2.aneel.gov.br/aplicacoes/audiencia/arquivo/2016/039/resultado/ren2016-754.pdf>.
- [35] National Electric Energy Agency (ANEEL), Research and Technological Development Program for the Electric Energy Sector, 2017, accessed on 21/03/19, available online at: http://www.aneel.gov.br/programa-de-p-d/-/asset_publisher/ahiml6B12kVf/content/regulamentacao-vigente/656831?inheritRedirect=false&redirect=http%3A%2F%2Fwww.aneel.gov.br.