

## Tauron Polska Energia SA

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### Description of the Organisation

The Instituto Nacional de Matemática Pura e Aplicada (IMPA) is reputed as one of the most well-established research institutes in the world. It played a leading role in the developments of dynamical systems through the works of Mane, Palis and Peixoto. It has well developed collaborations with leading mathematicians from abroad such as S. Smale and J-C Yoccoz. Such leading position was confirmed with the award of one the Fields Medal to IMPA's extraordinary researcher Artur Avila.

In 2018, it will be the key organizing institution of the International Congress of Mathematicians (ICM) which will take place in Rio de Janeiro, Brazil.

Furthermore, the Unité Mixte Internationale CNRS - IMPA (IMPA 2294) is located at IMPA and was created through an agreement signed in 2006 with the Centre National de la Recherche Scientifique (CNRS). In the subject of mathematical modelling, IMPA has three active labs, namely Fluids, Visgraf, and the Laboratory for Analysis and Mathematical Modelling in the Applied Sciences (LAMCA).

In the field of Mathematical Modelling in Finance and Energy, IMPA has ongoing collaboration agreements with Petrobras and with the Brazilian Stock Exchange (BMF Bovespa) in the area of Portfolio Management and Counterpart Risk. It also has a Professional Master Program in the Mathematical Modelling in Finance.

IMPA has hosted throughout the last 10 years over 10 international workshops in the subject of mathematical modelling in Finance and in the subject of mathematical modelling of biophysical phenomena.

### Role of the Organisation in the project

IMPA is leader of the preparation WP concerning the stakeholders consultation and surveys (WP2) and strongly supports the dissemination and exploitation of results (WP11) whose role of extra EU partner country and his international impact all over the world made IMPA the perfect leader/supporter of these WPs. For that concerns WP2 IMPA is responsible the arrangement of a stakeholders consultation survey, evaluation of the survey and first discussion of learning outcomes by a virtual meeting internal of the consortium, for planning of brainstorming activities and definition of the new educational methodologies to implement, for organizing a discussion about how to implement the novel educational methodologies and analysis of the requested technology (by a virtual conference).

On the other hand, given his important role in the energy market both in EU and in extra-EU countries, IMPA will be pivotal in the dissemination phase concerning WP11. IMPA will disseminate the project during the three years in important academic/business forum that will take place both in EU and in extra-EU countries.

Moreover we recall that an important feature of IMPA comes from his activities with students. In fact IMPA

receives a large number of students and researchers from all over the world in the various fields of Mathematics, ranging from Applied Mathematics to Mathematical Education and knowledge diffusion. It also hosts a number of conferences throughout the year and has an active fully accredited post-graduate program. It will participate both by hosting students and researchers as well providing technical training, and sending interested students to the program.

#### **Contact Person's Experience and Expertise**

Jorge Passamani Zubelli Holds an undergraduate degree in Communications Engineering from the Military Institute of Engineering - IME (1983), an M.Sc. degree in Mathematics from the Institute for Pure and Applied Mathematics (1984) and a doctorate in Applied Mathematics from the University of California at Berkeley (1989). He developed several research visits at institutions including the Center for Pure and Applied Mathematics (Berkeley), Mathematical Sciences Research Institute (Berkeley), Università di Milano and University of New York City. He taught at the University of California at Berkeley and the University of California at Santa Cruz. He has been Full Professor (Pesquisador Titular) of Institute for Pure and Applied Mathematics (IMPA) since 2000 where he started with a tenure track position in 1994. His research deals with Mathematical Modeling and Inverse Problems focusing on different theoretical as well as practical aspects of Analysis, Partial Differential Equations and Computational Mathematics. Because the generality of this area he has been working both in theoretical aspects (integrable systems, solitons and inverse scattering) and applications (quantitative finance, semiconductor and CT). He has published 3 monographs and over 50 papers in refereed journals including high impact in their fields such as Science, Inverse Problems, and Communications in Mathematical Physics. He supervised 10 Ph.D. dissertations and over 30 M.Sc.