Nomination Application of cosmoONE

Category :

Private Sector/NGO - Sustainable Growth/Circular Economy Award

Project: I.T. Management System for

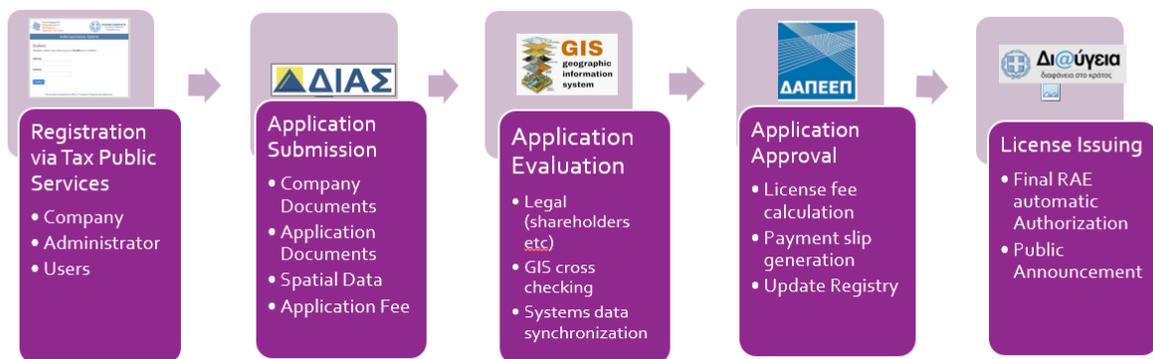## Renewable Energy Sources Production Licensing

A. Reasons for Nomination

One of the most important problems that humanity is called upon to confront, is the climate change, caused by the ongoing destruction of the environment, due to pollution and over usage of resources. Among the key actions taken, is the emerging shift of Energy production from Fossil to Renewable Energy Sources (RES), so that future generations will be able to enjoy continuous prosperity without damaging the environment and compromising the quality of life. RES apart from technology, is a matter of systematic study, planning, financing, constructing, licensing and operating expensive assets and investments. Information Technology is the enabler for Governments, Authorities, and Investors to collaborate along the journey of RES projects, from its application inquiry till its connection on the grid, in order to be realized the earliest possible and with the minimum administration friction among the stakeholders. IT technology is the catalyst, by establishing automated rules and procedures to ensure equal treatment, transparency and accuracy of information, data and actions, aiming that the overall energy production transformation, will satisfy humans, companies, institutions, and fulfill the national Energy targets towards a sustainable future.

cosmoONE participation in WITSA 2022 awards, is related to its contribution to the fulfillment of the Greek RES energy targets in the period 2020-2022, as it provided complex I.T. systems to the Greek Regulatory Authority for Energy (RAE) for RES Applications and Production Licensing. cosmoONE after studying RAE requirements and the Legal Framework, analyzed, developed, supported, and maintained an IT "connected environment", which assisted the participants along the entire process steps, i.e. from submitting their interest with declaring, filling, attaching, and validating data, to processing their inquiries with assigning, approving, communicating, paying, and authorizing engagements, till the final posting and issuing of the RES production license.

The licensing process

Registration via Tax Public Services
- Company
- Administrator
- Users

Application Submission
- Company Documents
- Application Documents
- Spatial Data
- Application Fee

Application Evaluation
- Legal (shareholders etc)
- GIS cross checking
- Systems data synchronization

Application Approval
- License fee calculation
- Payment slip generation
- Update Registry

License Issuing
- Final RAE automatic Authorization
- Public Announcement

The I.T. application was built with inherent intelligence, as it was able to guide the user in specific actions according to the type of RES production plant, (photovoltaic, wind, hydroelectric, biomass etc),and provided user choices either for Initial Applications or Change Requests, such as change in production capacity, or relocation-resize of plant, splits and merging of installations, transfer of ownership, and many more administrative options. The system was capable to calculate fees according to the plant MW capacity and to the Legal Status of the applicant, to generate Payment codes, and to communicate with banks to ensure the proper payments. Using well defined APIs, it could communicated with other external and 3rd party systems, such as GIS system for pinning the plant location on the map and check for possible bounder violations, (such as overlapping with NATURA Regions and districts of Archeological sites) and with Public Services to automatically time-stamp and post the decisions at each procedure step.

Interoperability with other I.T. Systems
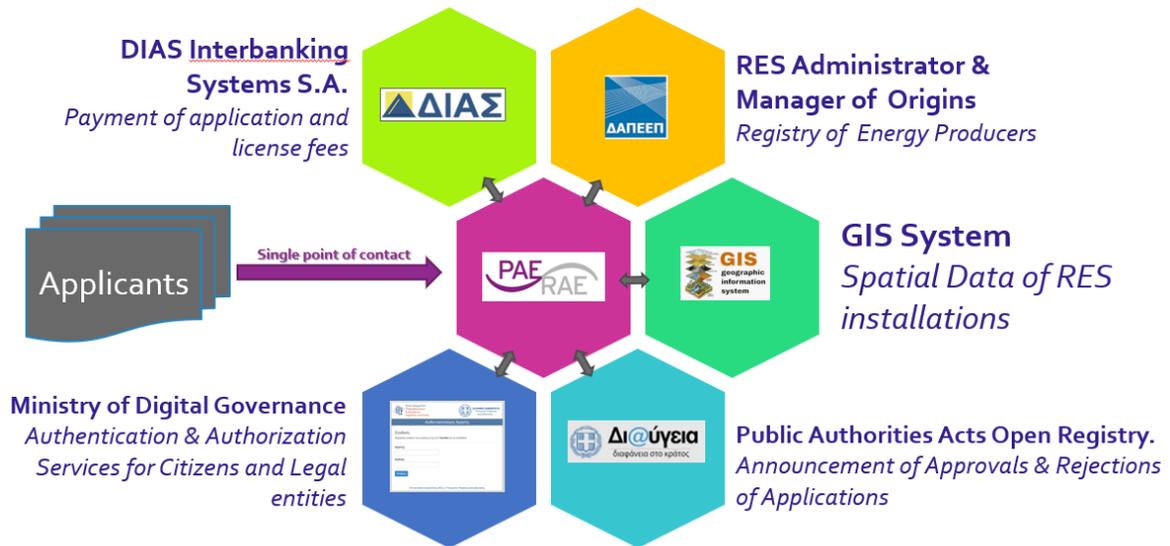
Special provisions were taken for data privacy and security. All necessary company and personal data were fully validated and were 100% secure, as each user and every company registered in the system, was authenticated & authorized by the Greek Taxation System, used as a registration sub-module of cosmoONE application, after a special Ministerial permission. The interoperability services along with the application registration scheme, made it possible, that any type of combination among Legal Entities, Natural Persons, and number of licenses was able to be satisfied. For example, users could handle one or more applications from their own or 3rd party companies, and companies could assign a mix of internal & external users as operators etc. Finally, the application incorporated a build-in communication and messaging system, ensuring that no information is posted or exchanged via other ways, ensuring information integrity and tracking.

It is fully recognized by the Energy market in Greece, that the IT system boosted the licensing procedure of RES plants, both new and old ones, that were stacked due the previous manual processing in record braking rates. The supporting information below, explains how it was possible to process thousands of applications between 2020-2022 and license investments of 45+ GW in RES for the benefit and sustainability of the Greek economy and the environment.

The system was presented in various occasions and fora, in Greece and abroad such as WIND EUROPE 2022 in Bilbao together with RAE *(see related video).* It also received a BRONZE award at the Greek Business IT Excellence Awards in 2021 in the Public-Private Partnership category, as the award committee recognized its technical excellence and execution.

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B. Supporting Information

B1. White paper

I.T. Management System for
Renewable Energy Sources Production Licenses

Introduction

The Energy Regulatory Authority (RAE), based on its statutory role, decides, among other things, on the applications submitted by Legal Entities and individuals in Greece and abroad for energy production licenses from Renewable Energy Sources (RES) and SITHYA (Co-production of Electricity & High Efficiency Heat).

With a national target for production of 50% of the required electrical power of the country from RES by 2030, the importance of investments in RES increased sharply, resulting in a huge investment interest which in turn caused congestion in the management of production requests in RAE. The obligation of the Authority to process and decide on RES applications, respecting the principle of transparency & taking into account the specific characteristics of the applicants, and the inherent complexity of the overall licensing process, were the main factors of delaying the decision-making, which emerged as the most serious challenge in the field of RES for RAE. This challenge, that become evident in late 2019 , was the No1 problem that RAE had to face successfully, to facilitate investments in the RES market.

Early 2020, the Ministry of Energy decided that a new legislation for RES would be announced mid-year and based on that, a new bylaw would follow from RAE regarding the issuing of RES Production certificates. So, the information system normally had to wait till the introduction of the new legislation and the new Bylaw, to take into account, the new provisions and implemented them accordingly. But that would delay the introduction of the new IT system for one more year, and this was not affordable from both sides, the market and the state.

The project goals and challenges

Feb 2020, cosmoONE and RAE assembled a work group to analyze and specify an information system that could boost the submission, management and issuing the RES applications and certificates.

The three specific and measurable goals that were set were:

1. Going into production for submitting new RES & SITHYA applications by the end of 2020

2. *Integration of existing production paper-based applications into the system to increase the processing speed for their inspection, evaluation and issuing of production certificates*
3. *Introduction a new functionality of license and certificates change requests by the investors.*

The critical success factors of the project that were taken into account were also identified and addressed, were the following.

✓ *The Operational Support capacity of RAE towards the hundreds of investors had to be enhanced and assisted with real time information for the status of each request. The solution was to involve the organized help desk & Customer Operation Dept of cosmoONE, i.e. to accommodate the IT system implementation with operation and support services.*

✓ *All RAE internal process points with lack of automated controls had to be addressed from the application to exclude these points of delays.*

✓ *RAE workload generated by repetitive bureaucracy had also to be addressed, modeled, and fully automated.*

✓ *External RAE necessary procedures, such as Payments and Deposits to Banks, Posting of Certificates to Gov Public Portals such as DIAVGEIA , Data Exchange with other Public Entities such as DAPEEP (The RES Administrator Authority) had to the linked as system-to-system integration, and be an integrated procedure of the application with automation of process checks, the calculations of fees and related posts.*

✓ *Replacement of data entry with extraction of needed data from secure sources should be maximized in order to reduce human errors and increase accuracy of information.*

✓ *The vast amount of participation documents for each RES application, as required by Legislation, leaded to the direction of an innovative design of the UI, with clear enumeration & visualization of the required documents that should be submitted per case and according to the RES technology.*

✓ *Last but not least, all communications between the Authority and the Investors should be materialized within the application, in order to exclude telephone calls, emails and fax that could create misunderstandings, confusion and delays in response. So, a communication system was incorporated, and each user was able to track & trace messages, exchange files with the other part, be timely informed with system notifications and follow up properly the progress of his application.*

Implementation

cosmoONE, decided to follow agile methodologies, due to the uncertainty of the specs that could be altered with the new legislation in the middle of the development. The project was divided in four sections, and each one was a distinct operational module.

The first module *involved the registration, authentication and access subsystems of all users and all Legal Entities in the application. Using APIs from the Interoperability Center of the Ministry of Digital Governance, not only recure registration and certification with company and personal*

credentials was possible, but also essential data were automatically retrieved, minimizing the need of data entry.

The second module involved the submission of new applications. A very user friendly and a step-by-step procedure was created in order to make it crystal clear to the applicants, what type of documents and at which placeholder they had to submit documentation. Drop-down menus, color-guided checks, case-sensitive input field and graphical interpretation of the process steps were used to facilitate the users in their application submission tasks. According to the registration preferences, a user could submit one or more applications, for himself or other persons and Legal entities for one or different types of RES.   As part of this module, a special application was used to batch load old applications into the system and invite the applicants to fill the missing data.

The third module addressed the management of the application from the RAE side. This module carried out the vast majority of the overall application intelligence. Main features were the following

➢ A dedicated integration with RAE's internal GIS system was implemented, which resulted in the smooth transfer of the files with spatial data from the application to the GIS system and the extraction of the control file, the updating of the map and the geographical information to the new application.
➢ A payment subsystem was activated, including the fee calculation based on the data of each application, the issuing of a payment code and the updating of the application of each timely related payment transaction via the InterBanking payment system DIAS.
➢ A RES Production Certificates system was also created, with different RES templates, which when the required conditions were met, was filling the respective template with the corresponding data, send it to DIAVGEIA, obtain a unique registration ADA number, post it automatically, and all the above without any manual action by the Authority.

The forth module facilitates change requests of Production Licenses. Based on the same methodology, the used issues a change request and the authority approve or not. Some types of change requests are self-approved and act as information notice towards the Authority, such as a change of the Legal Representative of the RES owner, a change of the Company address etc. Change requests were divided according to legislation for their submission dates segmentation and according to their type. Typical types of change requests include change of the geographical boundaries of the RES production area, change of production capacity, merge of two or more production facilities, split of production facilities, transfer of ownership of the RES production license etc.
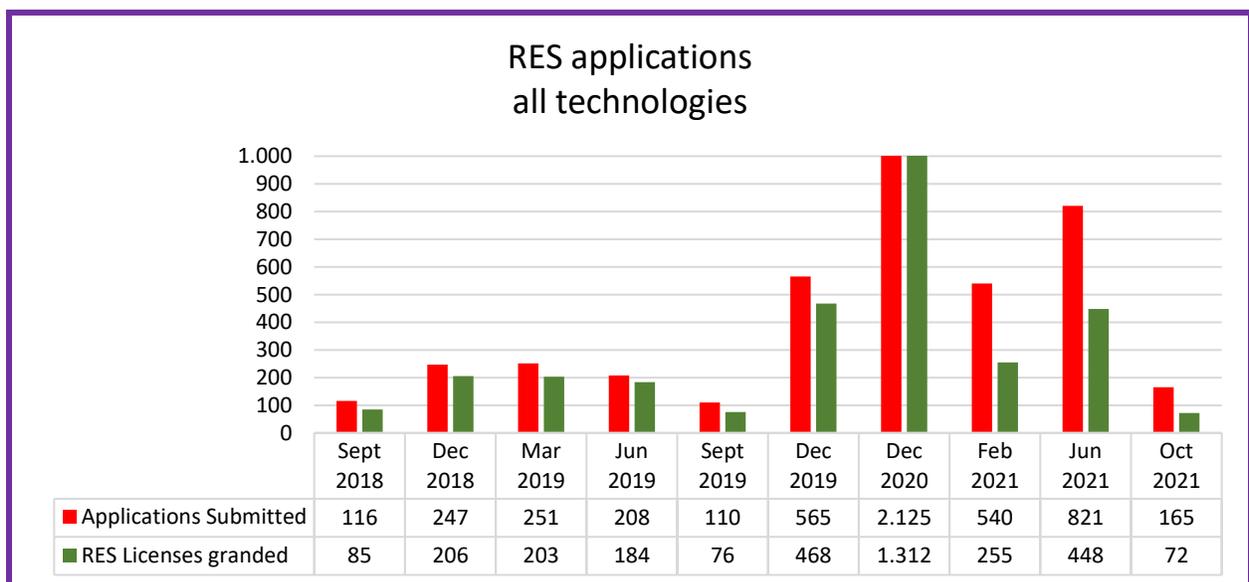
cosmoONE : IT Management System for Renewable Energy Sources Production Licensing

Provisioning

The application is provided as a service by cosmoONE. All hardware and software is hosted in the certified DATA CENTER of COSMOTE, with strict access, high security, tools for intrusion detection and prevention and recover facilities. Operational support is provided by the experienced in customer services Operations Dept of cosmoONE, with the use of Help desk applications and telephone support to users. Last but not least, cosmoONE together with key personnel from the Authority staffed the project management office and provided technical consulting to RAE for decision making to implementation alternatives. These components were the catalyst for the system to operate immediately, safely, with adequate computing resources and the human resources that were added to support the operational support of RAE licensing procedures.

Results

From 2001 until June 2018, 2,700 RES production licenses have been issued, representing approximately 10 GW. These permits have been submitted and evaluated through physical files.

In mid-2020, and with the new system, approximately 1,500 pending production applications for the period September 2018-December 2019 for projects with a total capacity of 25 GW were resubmitted electronically. This electronic system enabled the rapid evaluation of these applications within months of their submission, contributing to the achievement of the National Target for 30% of the power generated by RES by 2030.

RES applications all technologies

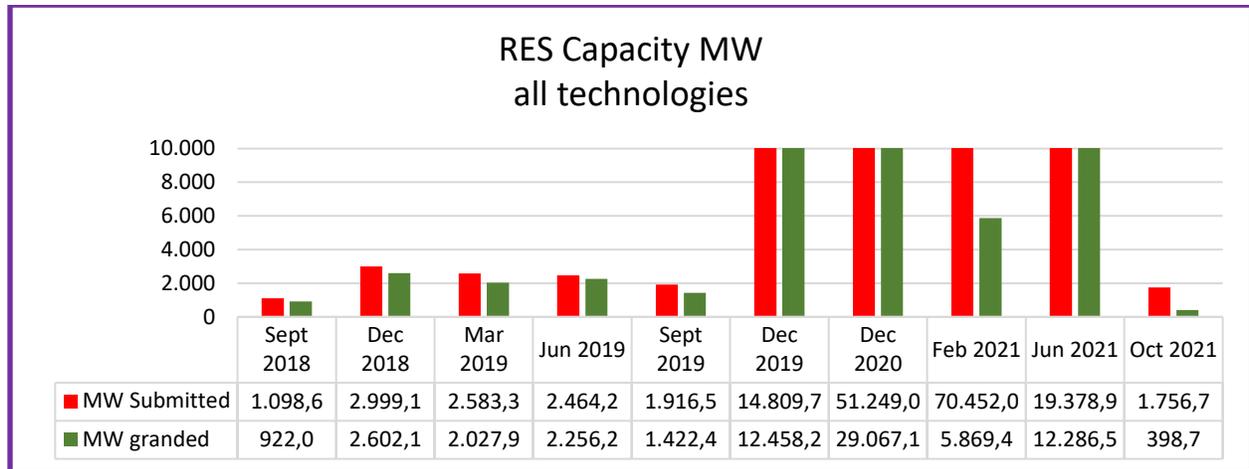|	Sept 2018	Dec 2018	Mar 2019	Jun 2019	Sept 2019	Dec 2019	Dec 2020	Feb 2021	Jun 2021	Oct 2021
Applications Submitted	116	247	251	208	110	565	2.125	540	821	165
RES Licenses granded	85	206	203	184	76	468	1.312	255	448	72

The first implementation of the innovative system was implemented in the cycle of new applications of December 2020, when the largest number of applications was submitted, both in number and in force, in the 20-year history of RAE: 1,864 new applications for projects with a total capacity of 45.5 GW.

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Importance of System

It is a paradigm of an innovative business process outsourcing project, the result of flexible design, rapid implementation, a high level of interoperability, excellent cooperation between the Private and Public sector, and a consistent focus on the outcome & result.

The importance of the system for the National Economy is reflected in a 15+ billion investment package that will be implemented earlier than forecast timeline, due to the faster and accurate processing of the respective RES production applications.

RES Capacity MW all technologies

	Sept 2018	Dec 2018	Mar 2019	Jun 2019	Sept 2019	Dec 2019	Dec 2020	Feb 2021	Jun 2021	Oct 2021
■ MW Submitted	1.098,6	2.999,1	2.583,3	2.464,2	1.916,5	14.809,7	51.249,0	70.452,0	19.378,9	1.756,7
■ MW granded	922,0	2.602,1	2.027,9	2.256,2	1.422,4	12.458,2	29.067,1	5.869,4	12.286,5	398,7

***Above all, is a huge sustainability gain**, for the benefit of the environment, as it changes dramatically the energy production mix, putting in action clean energy sources and securing the future for the society.*

B2. References

<u>Video *(from Wind Europe 2022 Bilbao, joint presentation with RAE)*</u>

https://windeurope.org/annual2022/conference/posters/PO195/

<u>Announcements</u> *(translated to English, from Greek Web Energy sites)*

https://energypress-gr.translate.goog/news/rae-ekrixi-ependytikoy-endiaferontos-sto-kyklo-dekemvrioy-1864-aitiseis-synolikis-ishyos-4555?_x_tr_sl=el&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=wapp

https://energypress-gr.translate.goog/news/me-skreka-kai-pitsili-i-imerida-tis-rae-gia-pliroforiako-systima-ape-deite-programma-kante?_x_tr_sl=el&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=wapp

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