

# The U.S.-Israel Energy Center

## Energy Cyber Topic Call for Proposals\*

Webinar - September 10, 2020



**Ministry of Energy**  
www.energy.gov.il

רשות החדשנות  
Israel Innovation  
Authority

\*Complete information is provided in <https://us-isr-energycenter.org/guidelines-forms/>

Subject	Presented by	Affiliation
Introduction	Ms. Andrea Yonah	Director Business Development, East Coast and Midwest, BIRD Foundation
Welcome	Ms. Andrea Waldman Lockwood	Deputy Assistant Secretary for Africa, Middle East, Europe & Eurasia, Department of Energy, Office of International Affairs
Energy Center Presentation	Dr. Eitan Yudilevich	Executive Director, BIRD Foundation
Energy Cyber Topic Description	Mr. Roi Yarom	Director, Economy and Growth, Israel National Cyber Directorate
Energy Center Presentation (continued)	Dr. Eitan Yudilevich	
Q&A	BIRD Foundation/Energy Center Team	

- Questions will be answered at the end of the presentation
- Please submit questions through the **Q&A tab** at the bottom of your screen
- For reference, please include the **slide number** (top right), if relevant
- If we are unable to respond directly to your question, we will be happy to connect offline

The screenshot shows the homepage of the U.S.-Israel Energy Center website. The navigation bar at the top includes links for Home, About, Call For Proposals, Guidelines & Forms, Upload System, Q&A's, Events, Presentations & Webinars, News, and Contact. A banner for an "Energy Cyber Security Webinar - September 10, 2020" is displayed below the navigation bar. The main content area features four columns, each with an icon, a title, a description, and a "Read More >>" link. White arrows point from the "Call For Proposals" and "Guidelines & Forms" links in the navigation bar to the banner, and from the "Q&A's" link to the "Energy Cyber" column.

Icon	Category	Description	Link
	<b>Fossil Energy</b>	Safe, Sustainable and Resilient Development of Offshore Reservoirs and Natural Gas Upgrading through Innovative Science and Technology: Gulf of Mexico – Mediterranean – GoMed Consortium	<a href="#">Read More &gt;&gt;</a>
	<b>Energy Storage</b>	Lithium and Sodium Metal Solid State Batteries for Advanced Energy Storage Applications Consortium	<a href="#">Read More &gt;&gt;</a>
	<b>Energy Cyber</b>	R&D to deliver game- changing tools and technologies that help utilities secure today's energy infrastructure from advanced cyber threats  <u><a href="#">Upcoming Webinar</a></u> Sep 10, 2020	<a href="#">Read More &gt;&gt;</a>
	<b>Energy-Water Nexus</b>	Israel-U.S. Collaborative Water-Energy Research Center (Israel-US CoWERC) Consortium	<a href="#">Read More &gt;&gt;</a>

Complete information is provided in

<https://us-isr-energycenter.org/guidelines-forms/>



## **U.S. - Israel Center of Excellence**

in

**Energy, Engineering and Water Technology**

*(The U.S. – Israel Energy Center)*

## **Procedures Handbook**

**Submission Sections**


**Issued by: BIRD Foundation**

**Version: F8**


**Date: July 28, 2020**

- The establishment of a joint U.S.-Israel Energy Center was first authorized by the U.S. Congress in the U.S.-Israel Strategic Partnership Act of 2014; in 2016, the Israeli Government approved the funding for the expanded U.S.-Israel energy cooperation.
- The U.S. DOE and the Israeli Ministry of Energy signed an Implementation Agreement on June 25, 2018, establishing the Center.
- The Center's stakeholders (funding and oversight) are the U.S. DOE, the Israel Ministry of Energy (MOE) and the Israel Innovation Authority (IIA)
- DOE, MOE and IIA appointed the BIRD Foundation as the operating agent of the Energy Center.





***The goal of the Energy Center is to promote energy security and economic development through R&D of innovative energy technologies, while facilitating cooperation between the U.S. and Israeli companies, research institutes and universities.***

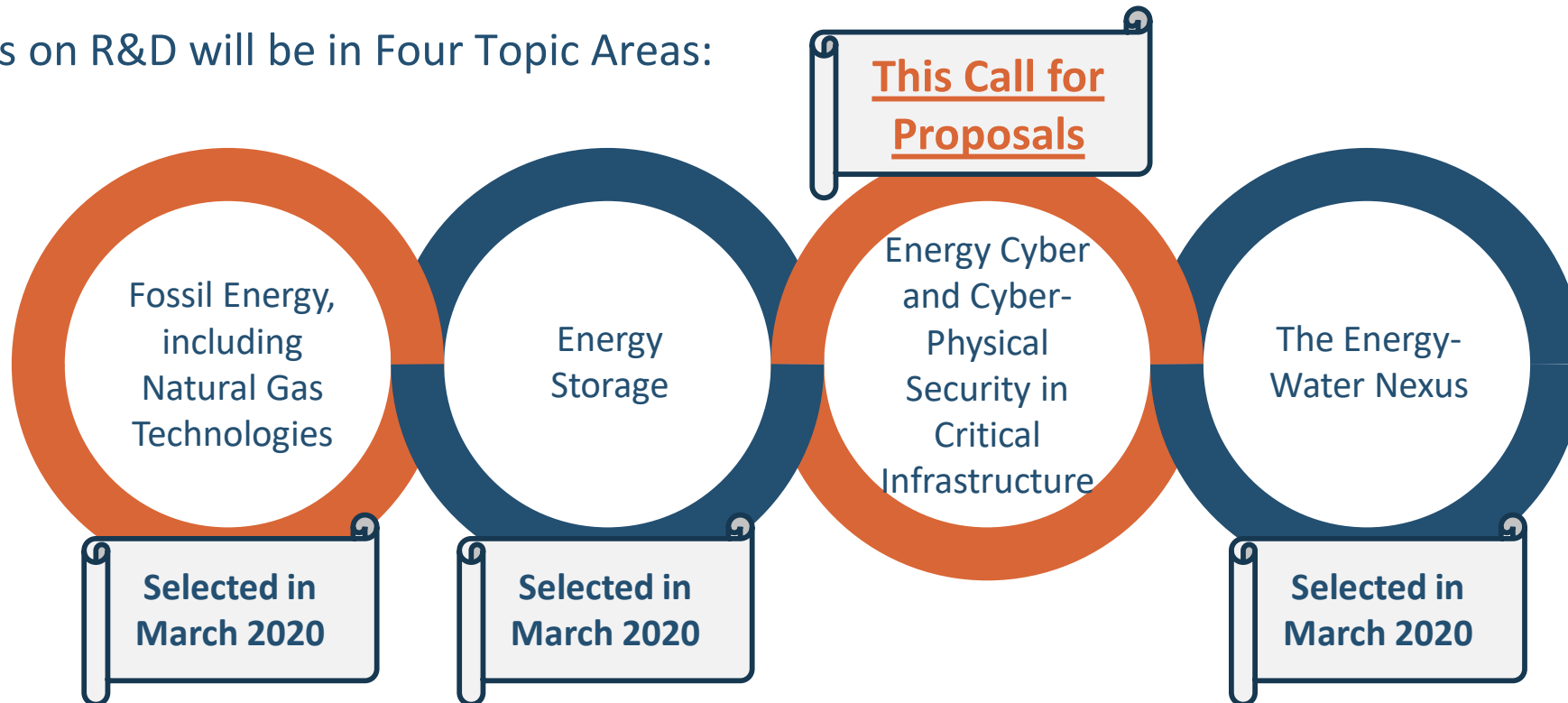


- 2 or more entities from the US **and** 2 or more entities from Israel
  - Commercial, Research Institutions and/or Universities
  - Israeli participants **must** include at least one commercial entity
  
- 1 US Lead (USL) and 1 Israeli Lead (ILL)
  - Management and reporting of both the technical and fiscal activities



The Energy Center will facilitate joint R&D on energy areas by teams of scientists and engineers from the U.S. and Israel and related joint activities in energy R&D.

The focus on R&D will be in Four Topic Areas:



Further details on each of the areas is provided in [us-isr-energycenter.org](https://us-isr-energycenter.org)

## **U.S.- Israel Energy Center Award Ceremony at the U.S. Israel Chamber of Commerce, March 6, 2020**

Standing in the center: U.S. Secretary of Energy, Mr. Dan Brouillette and Israel Minister of Energy, Dr. Yuval Steinitz who announced the winners.

Photo Credit: Shumilk Almany



## **U.S.- Israel Energy Center Executive Committee meeting at the U.S. Department of Energy, March 4, 2020.**

Standing in the center, the four members of the Executive Committee:

US DOE Office of International Affairs: Mr. Ted Garrish, Assistant Secretary and Ms. Andrea Lockwood, Deputy Assistant Secretary for the Africa, Middle East, Europe and Eurasia.

Israel Innovation Authority: Mr. Aharon Aharon, CEO.

Israel Ministry of Energy: Mr. Udi Adiri, Director General.



## Fossil Energy



Safe, sustainable, and resilient development of offshore reservoirs and natural gas upgrading through innovative science and technology: Gulf of Mexico – Mediterranean (GoMed Consortium).

## Energy Storage





Lithium and sodium metal solid state batteries for advanced energy storage applications

## Energy-Water Nexus



Israel-US Collaborative Water-Energy Research Center (Israel-US CoWERC)

	
<b>Tulane University</b>	<b>Hebrew University</b>
Louisiana State	Technion
University of Louisiana	University of Haifa
Argonne National Laboratory	Geological Survey of Israel
	Tel-Aviv University
	Delek Drilling LP

	
<b>Univ. of Maryland, College Park</b>	<b>Bar Ilan University</b>
Saft America	Tel Aviv Univ.
Forge Nano	Materials Zone
Ion Storage Systems	3D Battery

	
<b>Northwestern Univ.</b>	<b>Ben Gurion Univ.</b>
Argonne National Lab	Technion
Yale University	Mekorot
Dupont Water Solutions	Fluence Corp.
Evoqua Water Technologies	Galilee Society
CycloPure	
Current Innovation NFP	
Metropolitan Water Recl.	
Hampton Road Sanitation	

*The Energy Center encourages diverse cooperative activities, to be performed by the consortium members from both countries.*

- Development and/or demonstration of newly developed cybersecurity technology or tool at a relevant end-user site to validate a clear path to industry acceptance;
- Strategy for transitioning solutions into practice through commercialization or by making the solution available through open source.

*Sharing best practices by facilitating:*

01

access to R&D  
infrastructure

02

technology transfer  
practices from academic  
institutions and National  
Laboratories for application  
by industry in the United  
States and Israel,

03

workforce training and  
educational programs, and

04

student and postdoctoral  
exchange.

## *Development of Tools and Technology for Energy Cyber and Cyber-Physical Security in Critical Infrastructure*

### **Development of Tools and Technologies**

- Proposals must describe R&D to deliver game-changing tools and technologies that help companies secure today's energy infrastructure from advanced cyber threats;
- Design next-generation future systems that are built from the start to collectively cooperate and interoperate in order to automatically detect, identify, reject, and withstand cyber incidents, regardless of the threat;
- Pursue enhancements to the reliability, survivability and resiliency of energy infrastructure, while addressing the relevant regulatory groundwork (e.g. concerning privacy etc.);
- All solutions must support current logging standards, ready to feed Big Data and Machine Learning based analytics systems.



### *Development of Tools and Technology for Energy Cyber and Cyber-Physical Security in Critical Infrastructure*

#### **Use of Tools and Technology**

- Strengthen the energy sector's cybersecurity posture by leveraging and demonstrating already developed and vetted tools, guidelines, outreach, training and technical assistance in novel and improved ways, including the utilization of novel simulators.

#### **Cyber Emergency Preparedness and Response**

- Pursue enhancements to the reliability, survivability and resiliency of energy infrastructure;
- Facilitate faster recovery from disruptions to energy supply, including management and oversight of petroleum reserves.

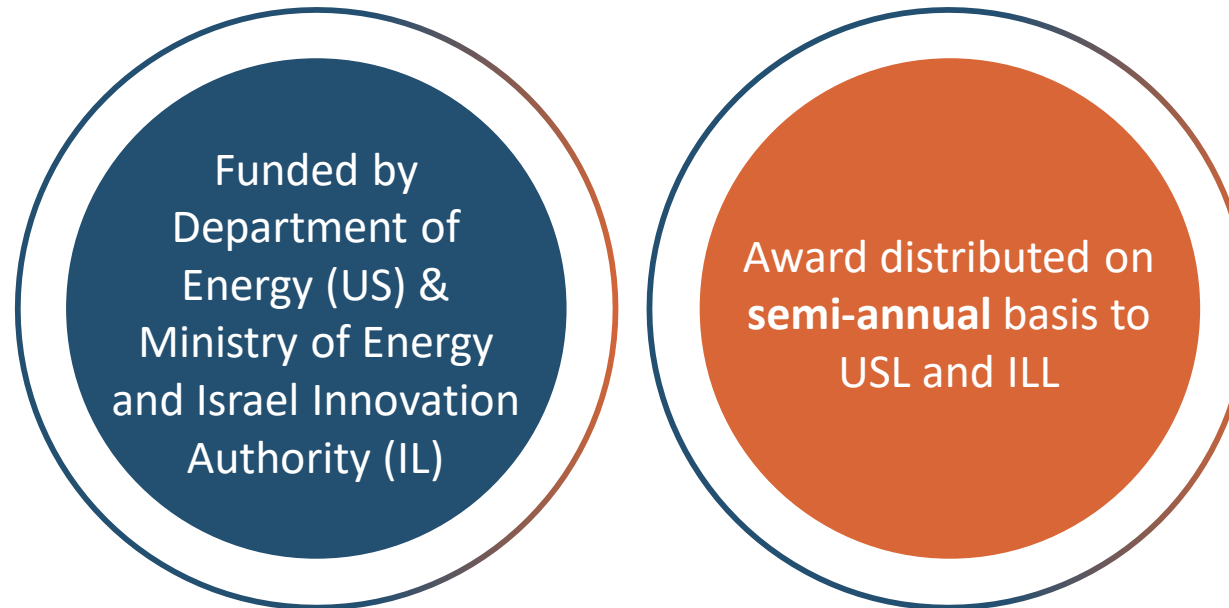
## *Development of Tools and Technology for Energy Cyber and Cyber-Physical Security in Critical Infrastructure*

### Subtopics may include:

- Cyber secure cloud-based technologies for Operation Technology (OT) environment to facilitate threat sharing and automated defenses throughout the energy sector;
- Innovative technologies that enhance cybersecurity of OT environments in the energy sector through automated detection, identification and mitigation of cyber threats;
- Redesign for cyber-resilient architecture for the energy sector providing the ability for systems interoperate, communicate, and cooperate in order to continue to operate in their designed capacity before, during and after a cyber-incident

### Examples:

- Ways and methods of accelerating the training phase and increase the accuracy of anomaly detection systems by using open-source knowledge of OT environments and architecture;
- Adversarial AI mitigation in Energy related systems;
- Utilizing 5G for a secure E2E implementation;
- Next Generation PLC cybersecurity;
- Secured edge Computing in the Energy Sector;
- Viable deception implementation in the Energy Sector;
- Time/Clock/GPS spoofing protection



**USL** = US Lead for Consortium Proposal

**ILL** = Israeli Lead for Consortium Proposal



The winning consortium will receive a 3-year award (subject to funding availability and performance)

The maximum award for a consortium is \$6M (\$2M per year)

50% cost share is required from the awardees.

The program may be extended for up to 2 additional years (for a total of 5 years, maximum total award of \$10M)

- Include all development expenses to be incurred during the course of the Program
- Separate consolidated budgets for US (USB) and IL (ILB) members, based on the budgets prepared by each consortium member.
- To receive Maximum award, budget must be Minimum \$12M (\$4M annual)

- The USB should include the minimum 50% cost share from the U.S. Consortium Members (CMs), **in aggregate**. The ILB should include the minimum 50% cost share of the Israel CMs, **in aggregate**.
- Relative workshare expected to be 50%/50% between Israel and US awardees. Well justified exceptions will be considered but **no deviations more than 60%-40%**.

The BIRD Foundation, as the EC Secretariat, will **sign separate funding contracts / agreements** with the U.S. Lead Awardee and with the Israeli Lead Awardee.

Agreements will include substantive milestones, budget, reporting and other requirements, as well as payments due to the Consortium by the EC.

A Separate Consortium Agreement must be signed by **the consortium members.**

1

The consortium will submit one joint **semi-annual** technical report

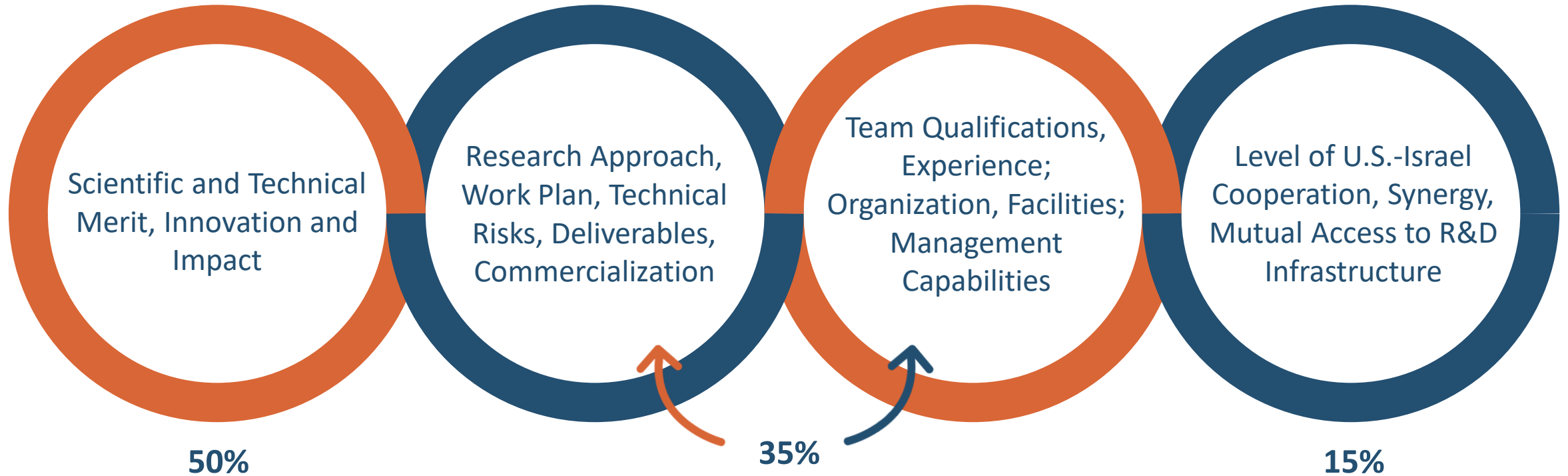
2

The US and Israeli Leads will each submit separate **semi-annual** fiscal reports

3

In addition to the above, an **annual** technical and fiscal summary/presentation will be submitted by the consortium

- Should include updated budget for both US and Israel Leads for upcoming year



Complete information is provided in <https://us-isr-energycenter.org/guidelines-forms/>

1

- Draft an Executive Summary (optional)
- Template available on the Energy Center website: [us-isr-energycenter.org](https://us-isr-energycenter.org)

2

- Introductory meeting between US Lead, Israeli Lead and **BIRD representative**

## Deadline: November 30, 2020 (UPDATED)

EC's upload system will close once deadline has passed

1

Draft of Full Proposal *recommended*

- Draft must be submitted via EC's online upload portal
- Will be reviewed by EC Contact Person

2

**Full Proposal must be submitted online *and* sent to the BIRD Foundation in Israel (hard copy, unbound)**



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[www.us-isr-energycenter.org/presentations-webinars/](http://www.us-isr-energycenter.org/presentations-webinars/)

## Presentations

Upcoming Information Webinar:

**Cyber Security  
for Energy Infrastructure**  
[Click to register](#)

**September 10, 2020**

9AM (PST) | noon (EST)

7PM (Israeli time)

[Energy Cyber Topic Description \(pdf\)](#)

### Previous presentations and recorded webinars

#### **Proposal Preparation Webinar – September 4, 2019**

[Click here for the presentation \(pdf\)](#)

[Click here for the recorded webinar](#)

[Click here for the webinar Q&A \(pdf\)](#)

#### **U.S. – Israel Energy Center Roundtable – June 5, 2019**

[Click here for the presentation \(pdf\)](#)

#### **U.S. – Israel Energy Center Information Webinar – May 28, 2019**

[Click here for the presentation \(pdf\)](#)

[Click here for the recorded webinar](#)

[Click here for the webinar Q&A \(pdf\)](#)

Energy Center	Date
Call for Proposals published	July 28, 2020
Information Webinar	September 10, 2020
Executive Summaries (optional, on EC template)	October 15, 2020
<b>Proposals submission</b>	<b>November 30, 2020</b>
Selections/Awards	February/March 2021

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