

### 2020 Renewable Energy & Storage RFO Respondent Webinar

November 10, 2020



- 1. Introduction to East Bay Community Energy
- 2. Overview of 2020 Renewable Energy & Storage RFO
- 3. RFO Timeline
- 4. Questions & Answers

Throughout the presentation, viewers can use the "Q&A" section of the Zoom webinar controls panel on the bottom of their screen to submit questions to East Bay Community Energy. EBCE will attempt to answer all questions given time availability, otherwise questions will be answered in the written Q&A document to be posted on the RFO website.

Please also note that this webinar is being recorded. The slides and recording will be uploaded to the RFO webpage.



# **Intro to EBCE**





## East Bay Community Energy

- Community choice energy provider enabled by CA State Law passed in 2002
- EBCE was formed as a Joint Powers Authority in December 2016 and is governed by a Board of Directors composed of representatives from 15 participating cities and the unincorporated areas in Alameda County. 3 new city members were added in 2019. Current members of EBCE:

City of Albany	City of Fremont	City of Oakland	City of Tracy
City of Berkeley	City of Hayward	City of Piedmont	City of Union City
City of Dublin	City of Livermore	City of Pleasanton	County of Alameda
City of Emeryville	City of Newark	City of San Leandro	

- Largest CCA in PG&E territory: 560k customer accounts, ~1.5MM population, ~6TWh annual load *Note: Figures do not reflect enrollment of 3 new cities in 2021*
- EBCE is committed to providing Alameda County with cleaner, greener electricity at lower rates. EBCE reinvests earnings back into the community to create local green energy jobs, local energy programs, and clean power projects.

### **EBCE Introduction**

- EBCE is an independent public agency formed as a Joint Powers Authority, which is governed by its 15 participating members.
- EBCE's financial standing is independent of the participating members and its revenues are not part of the county general funds.
- Offers should assume no form of credit support provided by EBCE.
- Respondents can find EBCE's audited financials for 2018, 2019, and 2020 on the <u>https://ebce.org/2020-rfo/</u>
- EBCE has signed long-term agreements on over 650MWs of new renewable energy and battery storage capacity in California since our formation.



# Overview of RFO





### **1. Overview**

EBCE issued this 2020 Renewable Energy & Storage RFO to procure long-term renewable energy and storage resources, to provide long-term clean energy hedges and Resource Adequacy, and to contribute to EBCE's Renewable Portfolio Standard (RPS) and Integrated Resource Plan (IRP) obligations under SB 350 and SB 100.

### RFO Materials: https://ebce.org/2020-rfo/

- Protocol
- <u>Attachment A</u>: Notice of Intent to Offer (NOI)
- <u>Attachment B</u>: Participation Agreement
- <u>Attachments C.1 C.2</u>: Offer Forms (1 & 2)
- <u>Attachment D</u>: Offer Supplement Requirements
- <u>Attachments E.1 E.4</u>: Product Term Sheets
- EBCE Audited Financials 2018, 2019, 2020



### 2. RFO Goals

EBCE seeks transactions that will contribute to our greenhouse gas reductions targets and our long-term position hedging. EBCE is targeting multi-hundred megawatts of cumulative capacity from this RFO.

### **Eligible Products:**

- 1. As-Available Product from RPS-eligible resources
- 2. As-Available RPS Product plus Energy Storage
- 3. Indexed Energy plus RPS attributes
- 4. Shaped RPS Energy Product
- 5. Stand-alone Energy Storage Toll
- 6. Shaped Clean Energy Hedge



# 3. Eligibility

### **Facilities:**

- <u>Location</u>: Projects may be within or outside of California. All energy must be deliverable to CAISO.
- <u>Construction Status</u>: Energy and related products may come from new or existing resources.

### Capacity:

- <u>Minimum Contract Capacity</u>: 10 MW
- <u>Maximum Contract Capacity</u>: 150 MW\*
  - \*For As-Available RPS Product Plus Energy Storage, max. applies to generating asset; not inclusive of storage capacity
  - Note: 10-150MW is the acceptable capacity range for an offered variation of any product. Acceptable capacity range for required Standard Offers are detailed in Section 5c.

### **Delivery Date:**

• Energy and RPS attribute delivery must be within calendar years 2021, 2022, 2023, or 2024, with a preference for projects that begin delivery earlier within this window.



# **3a. Project Viability Requirements**

### **Generating Resources:**

• All Offers for **1**. As-Available RPS Product, **2**. As-Available RPS Product plus Energy Storage, **3**. Indexed Energy plus RPS Attributes, and **4**. Shaped RPS Energy Product must be able to demonstrate that project meets requirements to be defined as an RPS PCC1 resource.

### Site Control:

- Site Control status and details are required in the Offer Form and Offer Supplement
- Additional supporting documentation to validate site control may be required upon request

### Interconnection:

- <u>New Resources</u>: Must have a completed Phase I Impact Study or later at the time of Offer
- <u>Existing Resources</u>: Existing interconnection required, documentation may be requested directly
- <u>Energy-Only</u>: Not required to demonstrate deliverability
- <u>With RA</u>: Must have obtained FCDS, PCDS, or be in process of obtaining deliverability
  - Further detailed next slide.



## **Interconnection: Projects with RA**

Respondents submitting product Offers that include RA are required to demonstrate that the project meets one of the conditions below:

- 1. A valid interconnection request for Partial or Full Capacity Deliverability Status has been submitted to the CAISO with a deliverability status that matches the Offer.
- 2. A valid interconnection request for Partial or Full Capacity Deliverability status where a Phase II report has been issued (or, for Cluster 12, is expected to be issued during the RFO evaluation period) and the project has maintained its request for Partial or Full Capacity Deliverability status.
- 3. Evidence of allocated or retained deliverability per the CAISO annual post Phase II deliverability allocation (TPD) process that indicates the project will be deliverable pursuant to the CAISO Tariff.
- 4. An executed Interconnection Agreement or Amendment to an Interconnection Agreement is in place and full effect reflecting, at a minimum, the offered deliverability status and evidence of retained deliverability per the CAISO's deliverability allocation process.
- 5. Documentation has been obtained that the project has received deliverability through the CAISO's Distributed Generation Deliverability (DGD) assessment process pursuant to the CAISO Tariff.



### 4. Evaluation Criteria

Offers will be evaluated within the following categories:

Category	Details	Weight
<b>Counterparty Execution Risk</b>	Development experience CCA experience Term sheet markups	25%
Offer Competitiveness	Economic valuation Project location Labor and workforce development	55%
Development Status Risk	Site Control Interconnection Permitting Environmental project-specific risks	20%

EBCE has a preference for projects within its service territory and that employ local and union labor. All preferences are stated within the protocol.



### **5. Guidelines for Offer Development**

For the purposes of this RFO, an "Offer" refers to the submission of all required information and details of any additional variations for <u>one product from one site</u>.

A complete Offer must contain at least the required Standard Offers detailed for the product. Required information must be provided in the formats requested, which entails data entry via the relevant Offer Form and written narrative via the Offer Supplement.

Variations are also welcomed and those must also be detailed and explained in the Offer Supplement. All Offer variations should still comply with the parameters outlined in **Section 5b.** of the protocol and detailed on the following slides.

Instructions for required information for each product is covered on Offer Form instructions tabs.

- Products 1-5 → Offer Form 1 (Attachment C.1)
- Product 6  $\rightarrow$  Offer Form 2 (Attachment C.2)





Respondents must submit Offers using the respective product tabs in the Offer Forms contained in **Attachments C.1 and C.2**.

The price must be stated using the format applicable to the specific product being offered.

Product	Pricing Format
As-Available RPS Product	\$ / MWh
As-Available RPS Product plus Energy Storage	<pre>\$ / MWh for RPS + \$ / kW-month (optional variable price) for energy storage component</pre>
Indexed Energy plus RPS Attributes	\$ / MWh
Shaped RPS Energy Product	\$/MWh
Stand-alone Energy Storage Toll	\$ / kW-month + \$ / MWh Variable O&M
Shaped Clean Energy Hedge	\$ / MWh



## **5b. Compliant Submission Specifications**

All Offers must meet the following specifications in order to be considered for selection.

Term	Terms may be offered for 5*-20 years as variations in addition to the required Standard Offer(s). <i>NOTE: *Change from original published protocol.</i>
Price	<ul> <li>Prices must be offered at the project Pnode (except Indexed Energy plus RPS Attributes).</li> <li>Respondents are encouraged to also submit Offers at the following settlement points:</li> <li>PG&amp;E Default Load Aggregation Point (DLAP)</li> <li>CAISO liquid trading hub (e.g. SP15, NP15, ZP26, etc.)</li> </ul>
Scheduling Coordinator	<u>EBCE to be SC</u> : As-Available RPS, As-Available RPS plus Storage, Stand-alone Energy Storage <u>Respondent to be SC</u> : Indexed Energy plus RPS Attributes, Shaped RPS, Shaped Clean Energy Hedge EBCE is open to alternative proposals on who bears the SC role; please state your assumptions where prompted in the Offer Supplement.
Ownership	All projects will be owned by the Respondent.
Number of Offers	An "Offer" refers to the submission of all required information and details of any additional variations for <u>one product from one site</u> . Respondents are not limited in either the number of Offers they may submit or the number of variations they may submit for any one Offer.



### **5c. Required Standard Offers & Variations**

All Offers must comply with the Standard Offer requirements outlined in the protocol. An Offer for any one product must contain all required Standard Offers for that product.

EBCE also encourages variations to be submitted in addition. Specific variation components of interest to EBCE are noted for each product; variations are optional though encouraged. Variations may include any combination of non-standard components to demonstrate project configurations that the Respondent believes drive particular value.



### Product 1: As-Available RPS Product

Eligible Resources: New or existing stand-alone PCC1-eligible generating resources; this may include: solar, wind, geothermal,
small hydro, biomass, biogas, or ocean (thermal, wave, or current)

Required Standard Offers		Term: 15 years		
	1	Pricing Structure: At project Pnode, fixed price		
		Capacity: 10-150 MW RPS Nameplate		
		Term: 15 years		
	2	Pricing Structure: At project Pnode, 2% annual escalation		
		Capacity: 10-150 MW RPS Nameplate		
Encouraged Variations		<u>Term</u> : 10 years and 20 years		
	*	Pricing Structure: Also priced at Hub (NP15 or PG&E DLAP)		
		<u>Capacity</u> : Varying sizes (Preference for 50-100MW size)		



### Product 2: As-Available RPS + Storage

<b>Eligible Resources</b> : New or existing PCC1-eligible generating resources with co-located energy storage. Storage may be any commercially viable technology with 2-hr, 4-hr, or 4-hr+ duration capabilities. <b>Required Products</b> : EBCE to receive all project attributes including RA, energy arbitrage, A/S.				
Required Standard Offers       Term: 15 years         Pricing Structure: At project Pnode, fixed price         RPS Capacity: 10-150 MW RPS Nameplate         Storage Capacity: 80% of RPS, 2-hr Duration, AC-Connected				
	2	<u>Term</u> : 15 years <u>Pricing Structure</u> : At project Pnode, 2% annual escalation <u>Capacity</u> : 10-150 MW RPS Nameplate <u>Storage Capacity</u> : 80% of RPS, 2-hr Duration, AC-Connected		
	3	<u>Term</u> : 15 years <u>Pricing Structure</u> : At project Pnode, fixed price <u>RPS Capacity</u> : 10-150 MW RPS Nameplate <u>Storage Capacity</u> : 40% of RPS, 4-hr Duration, AC-Connected		
Encouraged Variations	*	<u>Term</u> : 10 years and 20 years <u>Pricing Structure</u> : Also priced at Hub (NP15 or PG&E DLAP) <u>Capacity</u> : Varying sizes (Preference for 50-100MW size) <u>Storage Configuration</u> : DC-Connected		
COMMUNITY				

### Product 3: Indexed Energy + RPS Attributes

**Eligible Resources**: Indexed RPS energy and associated RECs from PCC1-eligible resources.

Required Standard Offers	1	<u>Term</u> : 15 years <u>Pricing Structure</u> : Fixed price <u>Capacity</u> : 10-150 MW RPS Nameplate
Encouraged Variations	*	<u>Term</u> : 10 years



### Product 4: Shaped RPS Energy

**Eligible Resources**: PCC1-eligible energy generated by one or more RPS-eligible resources.

Required Standard Offers		T <u>erm</u> : 15 years		
	1	Pricing Structure: At project Pnode, fixed price		
	1	Capacity: 10-150 MW RPS Nameplate		
		Shape: Shape details outlined in Shaped RPS Weights tab in Offer Form 1.		
Encouraged Variations		<u>Term</u> : 10 years		
	*	Pricing Structure: Also priced at Hub (NP15 or PG&E DLAP)		
		Shape: Additional shapes that provide value in mitigating energy price risk		



### Product 5: Stand-alone Energy Storage Toll

**Eligible Resources**: Storage may be any commercially viable technology with 2-hr, 4-hr, or 4-hr+ duration capabilities. **Required Products**: EBCE to receive all project attributes including RA, energy arbitrage, A/S.

Required Standard Offers	1	<u>Ferm</u> : 10 years Pricing Structure: At Pnode, fixed capacity price with variable O&M cost Capacity: 10-100 MW, 4-hr duration		
		Storage Parameters: 200 cycles per year		
	2	<u>Term</u> : 10 years <u>Pricing Structure</u> : At Pnode, fixed capacity price with variable O&M cost <u>Capacity</u> : 10-100 MW, 4-hr duration <u>Storage Parameters</u> : 365 cycles per year		
Encouraged Variations	*	<u>Term</u> : 15 years <u>Capacity</u> : 2-hr duration		



## Product 6: Shaped Clean Energy Hedge

**Eligible Resources:** Energy must be delivered by non-GHG emitting resource(s), this may include: energy storage, large hydro, combination of RPS and non-GHG resources. Nuclear not eligible.

Required Standard Offers		Term: 10 years		
		Pricing Structure: At project Pnode, fixed price		
	1	apacity: 10-150 MW delivered		
		Shape: Shape details outlined in Requested CF Shape tab in Offer Form 2.		
Encouraged Variations		<u>Term</u> : 5 and 15 years		
	*	For this product, EBCE would welcome additional dialogue to customize a transactio based off unit operating parameters and EBCE portfolio needs.		



### **Preview: Offer Form 1**

To be completed for Products 1-5.

If submitting for **multiple products** from the **same facility location**, complete <u>ONE Offer Form</u>, filling out tabs required for all products being offered.

If submitting for **multiple facility locations**, a <u>separate</u> <u>Offer Form</u> file is required for each unique facility.



#### EAST BAY COMMUNITY ENERGY

#### General Instructions for Completing Offer Form 1

Offer Form 1 consists of the following tabs, each of which need to be completed in full as listed relative to the product(s) being offered:

- ...>>> IF submitting for "As-Available RPS Product" complete the following tabs:
  - Respondent Information
     RPS Facility Info
     RPS Offer Terms
     4. RPS As-Available Generation
     or
     4. RPS PPA Firmed Generation
     5. Permitting & Environmental

#### ...>>> IF submitting for "As-Available RPS Product Plus Energy Storage Product" complete the following tabs:

- 1. Respondent Information
- 2. RPS Facility Info
- 3. RPS Offer Terms
- 4. Storage Offer Terms
- 5. RPS Plus Storage Details
- 6. Permitting & Environmental

#### ...>>> IF submitting for "Index Energy Plus RPS Attributes Product" complete the following tabs:

- Respondent Information
- 2. Index Plus Details
- 3. Permitting & Environmental (If Respondent Owns Facility or Facility is a New Build)

#### ...>>> IF submitting for "Shaped RPS Energy Product" complete the following tabs:

- 1. Respondent Information
- 2. Shaped RPS Submission
- 3.Permitting & Environmental (If Respondent Owns Facility or Facility is a New Build)
- ...>>> IF submitting for "Stand-Alone Energy Storage Toll" complete the following tabs:
  - 1. Respondent Information
     2. Storage Toll Info
     3. Storage Offer Terms
     4. Storage Toll Details
     5. Permitting & Environmental

## **Preview: Offer Form 2**

To be completed for Product 6.

The requested shape is provided as a general guideline.

The submitted shape does not need to conform to the requested shape, but to the extent possible, provide schedules that follow.

### 

#### Instructions for Completing the Offer Form 2 Offer Form 2 consists of the following tabs, each of which need to be completed in full as listed: 1. Respondent Information 2. Submitted Shape Monthly Submission Overview Boxes labeled with this color are titles and information Boxes labeled with this color are provided examples and required offer submissions Boxes labeled with this color are required or optional Respondent inputs Boxes labeled with this color are formulas that are carried from previously entered cells and are not changeable by Respondent 1. Facility Information Please fill out the monthly submitted shape table using the following guidelines: The requested shape on the "Requested CF Shape" tab is provided as a general guideline. 2. The submitted shape on the "Submitted Shape Monthly" tab does not need to conform to the requested shape, but to the extent possible, provide schedules that follow. File Naming Instructions 1. Offer Form files must be saved as "EBCE Offer Form 2\_RespondentCompanyName\_SiteName" Disclaimer Copyright 2020 East Bay Community Energy Authority, All Rights Reserved. East Bay Community Energy Authority does not make any representations or warranties, express or implied, with respect to the information contained herein, including without limitation any representation or warranty that the information contained herein is accurate, complete or timely



## **Offer Supplement**

An Offer Supplement is also required to be submitted detailing the requested information on the Respondent party, and project details for all facilities associated with the Offer(s).

Respondents must submit just one (1) Offer Supplement, regardless of how many projects are being offered. The final PDF should include the following sections:

- **Developer Background** [Complete only once and include as first section in Offer Supplement PDF]
- **Project Details** [Complete responses in order for each project offered; Standard Offers and any variations on the product should be detailed appropriately. Repeat process in a following section for each additional project.]

Instructions and requirements are found in Attachment D: Offer Supplement Requirements.



## 6. Required Information

Offers of different products have unique form submittal requirements. The required documents are detailed in **Section 6b** of the protocol and outlined in the matrix below, by product:

Requirement	1. As-Avail. RPS Energy	2. As-Avail. RPS+Storage	3. Indexed Energy+RPS	4. Shaped RPS Energy	5. Stand- alone Storage	6. Shaped Clean Energy
Participation Agreement	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
<b>Completed Offer Form</b> <i>*(refers to respective Attachment)</i>	✓ (C.1)	✓ (C.1)	✓ (C.1)	✓ (C.1)	✓ (C.1)	✓ (C.2)
Offer Supplement	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
<b>Redlined Term Sheet</b> <i>*(refers to respective Attachment)</i>	✓ (E.1)	✓ (E.2)	✓ (E.1)	✓ (E.1)	✓ (E.3)	✓ (E.4)
Interconnection Studies	$\checkmark$	$\checkmark$	N/A	$\checkmark$	$\checkmark$	N/A
Site Map	$\checkmark$	$\checkmark$	N/A	$\checkmark$	$\checkmark$	N/A

\*Given that products 1-5 all utilize Offer Form 1, Respondents making Offers for various



products from the same facility need only submit one Offer Form 1 per facility.

## Notice of Intent to Offer (NOI)

All Respondents who wish to submit Offers must complete and submit a Notice of Intent to Offer ("NOI") via email to <u>2020-RFO@ebce.org</u> in order to receive a unique submission folder link on Dropbox.

- EBCE will provide a submission folder link within two (2) business days of NOI being returned
- Final deadline to submit NOI is no later than 2pm PPT on November 23, 2020
  - If submitting for the early Offer deadline of Nov. 17, NOI must be submitted by **this Friday**, Nov. 13 by 2pm
- Early submission is welcomed and appreciated
- NOI form and instructions can be found in **Attachment A**



### 7. Communications

### RFO Webpage: www.ebce/org/2020-rfo

• All RFO materials, information, announcements, and Q&A will be posted here

**Submitting Questions**: To promote efficiency and accuracy in communications, all Respondents must to submit any inquiries via email to <u>2020-RFO@ebce.org</u>. EBCE will not respond to any material questions submitted after the final question deadline of November 16, 2020. EBCE reserves the right to combine, rephrase, or not respond to some questions.



# **RFO Timeline**





### Schedule

EAST BAY

Date / Time	Event
October 29, 2020	EBCE issues RFO
November 5, 2020; by 2pm	Deadline to submit questions for Webinar
November 10, 2020	Respondent Webinar for RFO
November 13, 2020; by 2pm	Deadline to submit Notice of Intent to Offer for November 17 early Offer deadline
November 16, 2020; by 2pm	Final deadline to submit questions
November 17, 2020; by 2pm	Deadline to submit early Offers for projects pursuing CAISO TPD affidavit process
November 19, 2020	EBCE to provide Q&A document, with responses to all questions in by Nov. 16
November 23, 2020; by 2pm	Final deadline to submit Notice of Intent to Offer and receive Dropbox folder link
December 1, 2020; by 2pm	Offers due
January 8, 2021	Notification of shortlisted Respondents and Offers
January 18, 2021	Form PPA redlines due from shortlisted Respondents
February – April 2021	Negotiations. Exclusivity Agreements and bid deposits due
April - May 2021	Contract approvals by EBCE Board of Directors

### **Early Offer Process**

In light of the December 4, 2020 CAISO TPD Affidavit deadline, EBCE will accept relevant Offers for an early deadline of November 17, 2020.

- EBCE will evaluate early Offers and consider an expedited shortlisting process by December 4th for competitive Offers.
- Submitting a proposal by the early submission deadline does not guarantee a shortlist decision.
- Proposals received as part of the early submission process will continue to be evaluated with other proposals.



### **Next Steps**

- 1. Submit Notice of Intent to Offer (Attachment A) to 2020-rfo@ebce.org
  - Submit NOI to receive Dropbox folder link
  - For Early Offer Submissions, submit NOI at earliest convenience and no later than **this Friday, Nov. 13 at 2PM PT**
  - Final Deadline: Nov. 23, 2020 at 2PM PT
- 2. Submit final questions to 2020-rfo@ebce.org by Nov. 16, 2020 at 2PM PT
- 3. Submit Offers via Dropbox by:
  - <u>Early Offers</u> (pursuing CAISO TPD Affidavit): Nov. 17, 2020 at 2PM PT
  - <u>Final Deadline</u>: Dec. 1, 2020 at 2PM PT



# Questions & Answers





### **Submitted Questions**

### Q1. How far away can I wheel power to the 2020 Renewable Energy & Storage RFO?

There is no explicit limitation on distance to CAISO. So long as the energy is deliverable to the CAISO projects can be sited outside of California.

### Q2. What is the max yield price of expected PPA rate?

There is no specific PPA price ceiling. This is an open solicitation seeking the most competitive pricing.

### Q3. Are third parties able to enter into the PPA agreement?

Respondents may submit for a project that they do not own, so long as they are an authorized agent of that party. EBCE is looking to transact on source specific projects.



### **Submitted Questions**

Q4. In regards to the stand-alone storage option described in the RFO, will EBCE accept a non-conforming offer for the 2-hour battery option? Specifically, would EBCE accept a term less than 10-15 years? Would EBCE be open to an RA only contract or a combination of a subset of contract years being a full toll and other years being just RA?

EBCE is open to Respondents submitting Offers for variations, so long as the standard conforming Offers are also included in the submission package. EBCE is open to terms of less than 10 years\* and variations on RA only/tolling arrangements. \*Change from original published protocol.

Q5. With respect to the installed MW capacity limit of 10 – 150MW (not including storage), will EBCE accept offers with a conditions precedent (CP) that any additional MW capacity for a project larger than 150MW be contracted with another party? For example, if a bidder has a 175MW RPS project, will EBCE accept a bid for 150MW with CP that the remaining 25MW of capacity be contracted by another party?

EBCE is open to Offers for partial offtake of projects larger than 150MW so long as assumptions and status relative to the sales process for the remaining capacity, e.g. any CP for uncontracted portions, are made explicitly clear in the Offer Supplement, as requested.



### **Submitted Questions**

Q6. For RPS + Energy Storage bids, understanding that the Storage Rate will be based upon annual Storage Capacity Testing, does EBCE have a preference with respect to Storage Capacity Output:

- 1) Storage Degradation over the life of the PPA, or
- 2) Augmentation to maintain MW nameplate across the PPA tenor?

EBCE's standard conforming Offer requires a degrading schedule over the life of the PPA. EBCE is open to consider Offer variations that include augmentation. Any Offers with augmentation must also include clear details on when and how the system is augmented and the contractual rights/obligations to augment.



### **Audience Questions**

If time allows.

Use the "Q&A" section of the Zoom webinar controls panel on the bottom of screen to submit questions.





## **Thank you!**

The webinar slides and recording will be made available on the RFO webpage. www.ebce.org/2020-RFO