Dear SME,

Thanks for agreeing to help out with this effort. Our task is to match each of the following communication protocols to the requirements that have been extracted from the known use cases. In order to help us get the right information to the right people and to properly summarize things for the CPUC, we're asking for your help in getting some basic information. Please complete the following to the best of your ability.

Section 1: Who and What

Please select your name from the following list or enter it manually: Rolf Bienert

Please select your protocol from the following list or enter it manually: OpenADR

What is the current (approved by standards/industry group) version of your protocol? v1.1

When was it approved? November / y201 Is it currently being revised ? No

What is the anticipated date for the approval/release of the next version? Enter Month / NA

Section 2: When and Why

Please input a short narrative of the problem that your protocol was created to address, and when it first was adopted.

After the blackouts in 2001 in California, the need for a M2M communications protocol became apparent. OpenADR intents to "inform and motivate" customer side resources to participate in events that stabilize the grid. These events can relay price information or specific energy consumption change requests.

Section 3: Current Status:

Please summarize the current usage and level of adoption of this protocol. If possible, please discuss the number and location(s) of current implementations of the protocol.

The protocol is stable with a solid certification program and certification test tool. Over 130 systems have been certified so far.

All California IOUs and several municipal utilities operate OpenADR servers (VTNs) as part of their demand side management platforms. We do not have exact numbers of deployments.

Section 4: Actors Currently in Play:

In order to decouple protocol specific nomenclature and to reduce the number of actors to the minimum relevant number, we've come up with the following list. Please indicate what actors are able to communicate directly with each other by using your protocol.

	EV Driver (EVD)	Power Flow Entity (PFE)	Utility Customer of Record (UCR)	EV Battery System (EVBS)	EV Power Converter System (EVPC)	Energy Connection System (ECS)	Energy Meter (EM)	Building Management System (BMS)
EV Driver (EVD)	-	✔						
Power Flow Entity (PFE)	✔	-	✔	✔	✔	✔	✔	✔
Utility Customer of Record (UCR)		✔	-					
EV Battery System (EVBS)		✔		-				
EV Power Converter System (EVPC)		✔			-			
Energy Connection System (ECS)		✔				-		
Energy Meter (EM)		✔					-	
Building Management System (BMS)		✔						-

Please add any notes needed to clarify the above table

I initially had more check marks but reduced them for the following reason. OpenADR is intended to communicate price or energy messages from a managing entity (usually a utility or aggregator) to a customer side resource (EV, Building, Solar, etc) and the other way around. Therefore I checked the PFE only as the connection point. This is not to say that OpenADR could not be used between the

What physical layer(s) does this protocol use for communication between devices?

OpenADR is web services, so in the application layer.

What language is used for communicating between devices (i.e. html, xml, etc.)

OpenADR transmits XML messages over HTML (RESTfull interface) or XMPP transport.

Section 5: Actors Anticipated to be in Play (As appropriate):

If the next version of your protocol is expected to allow for additional communications, please indicate them in the following.

	EV Driver (EVD)	Power Flow Entity (PFE)	Utility Customer of Record (UCR)	EV Battery System (EVBS)	EV Power Converter System (EVPC)	Energy Connection System (ECS)	Energy Meter (EM)	Building Management System (BMS)
EV Driver (EVD)	-							
Power Flow Entity (PFE)		-						
Utility Customer of Record (UCR)			-					
EV Battery System (EVBS)				-				
EV Power Converter System (EVPC)					-			
Energy Connection System (ECS)						-		
Energy Meter (EM)							-	
Building Management System (BMS)								-

Please indicate any additional functionality or limitations to functionality that are germane to the consideration of this protocol:

No change. Explanation see the previous matrix also.

What physical layer(s) does this protocol use for communication between devices?

OpenADR can use any physical transport layer that supports internet traffic.

What language is used for communicating between devices (i.e. html, xml, etc.)

OpenADR is VTN (server) to VEN (client) (and back) communication using XML.

Section 6: DC, Single Phase, or Polyphase:

Does your protocol include functionality to manage the flow of DC energy?	Yes
Does your protocol include functionality to manage the flow of AC energy?	Yes
Does your protocol include functionality to manage the flow of polyphase AC energy?	Yes
Does your protocol include functionality to manage the flow of energy from the vehicle back to the grid?	Yes

If needed, please add any explanatory details to the answers in section 6:

OpenADR intends to inform & motivate the other level entity. [Not enough space here