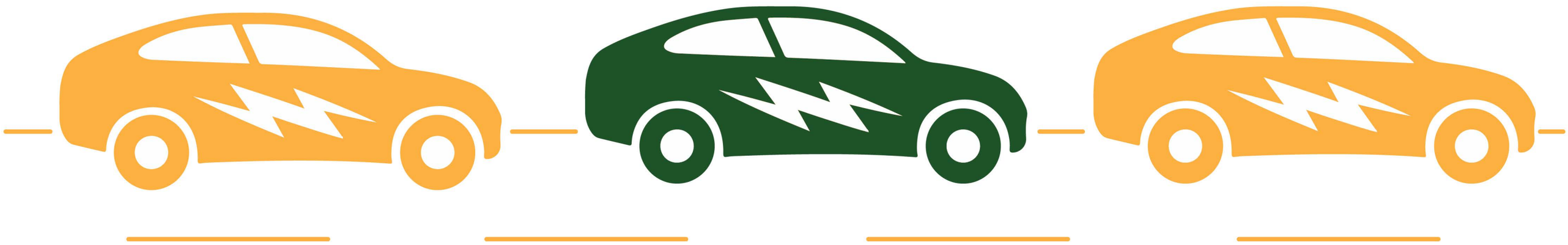
SUNFARM ENERGY SOLAR FRIDAY

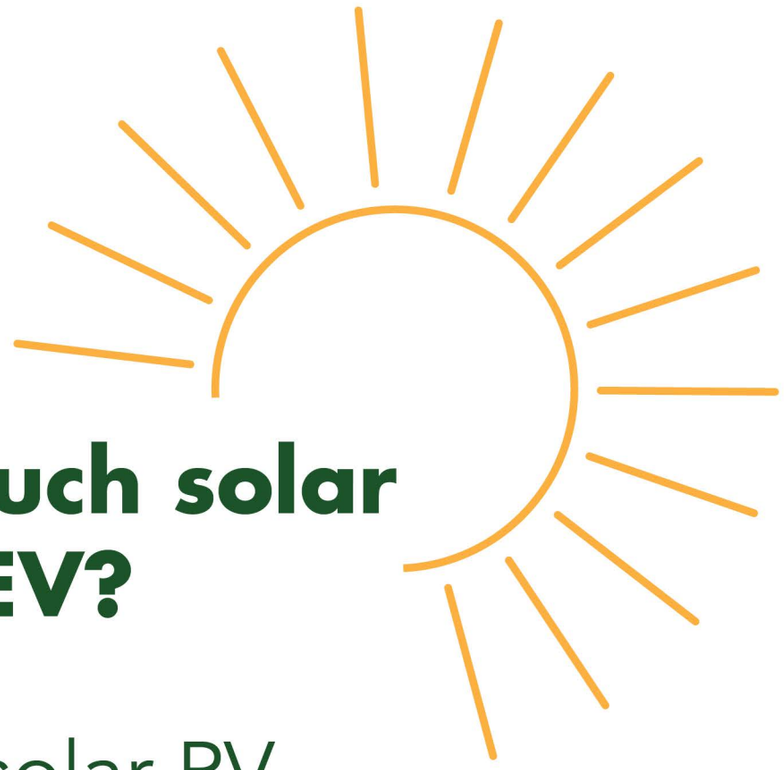
ELECTRIC VEHICLES & SOLAR

It seems like electric vehicles are everywhere these days.

And that's a good thing! Using an EV instead of a traditional gas powered vehicle is a great way to reduce your reliance on fossil fuels.

But did you know? You can take that clean energy commitment even further by charging your EV with the power of the sun.





The big question is, how much solar do you need to charge an EV?

It's important to make sure your solar PV system is properly sized to accommodate the charging load of an electric vehicle.

In this week's Solar Friday, we'll be breaking down how to calculate how much solar you'll need to start charging your EV with the sun.

Let's use a Tesla Model 3 in Florida as an example for our calculations:

Tesla Model 3:

- Range: **358 miles**
- Battery Capacity: **73.5 kWh**
- Daily Commute Distance: **50 miles**
- Hours of Ideal Sunlight: **5 Hours ***

*Most southern states like Florida and Alabama receive about 5 hours of ideal sunlight each day.

Start With Specs

In order to calculate how much PV you'll need to charge your EV, it's important to make note of the following information about your vehicle:

- Range of EV
- Battery Capacity of EV (kWh)
- Daily Commute Distance
- Hours of Ideal Sunlight (Insolation)

Step 1: Determine kWh per Mile

How much energy are you consuming per mile driven?

Formula:

Battery Capacity ÷ Range

Example:

73.5 kWh ÷ 358 miles = **0.2053 kWh/mile**

Step 2: Determine Total kWh per Day

What is your daily power consumption for EV travel?

Formula:

Commute x Total kWh per Mile

Example:

50 miles x 0.2053 kWh/mile = **10.31 kWh/day**

Step 3: Determine Solar PV System Size

How much solar do you need to charge your EV?

Formula:

kWh per Day ÷ Hours of Sunlight

Example:

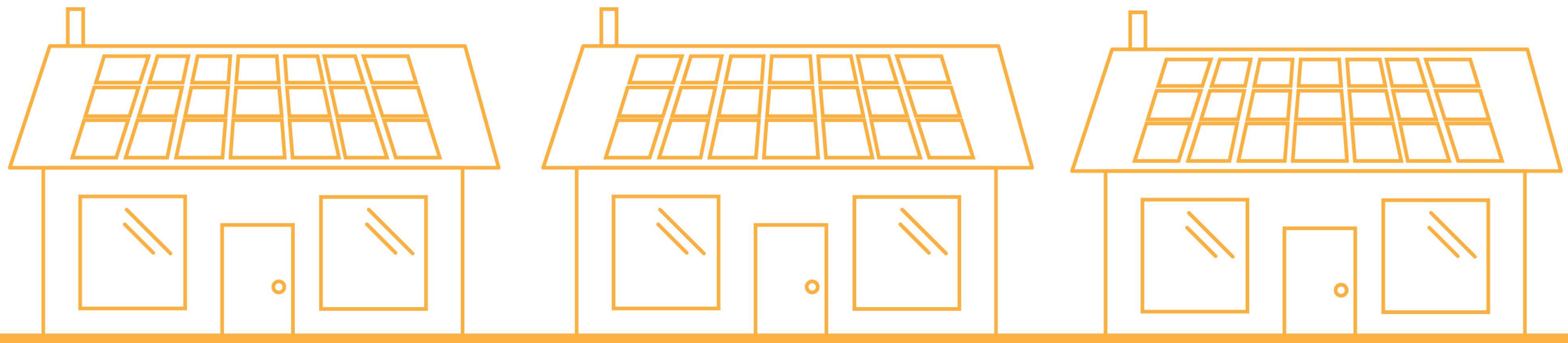
10.3 kWh/day ÷ 5 Hours = **2.1 kW**

Make sure you system size accounts for power conversion losses.

Keep in mind that some energy loss occurs during a power conversion depending on a variety of factors including system design, equipment, and shading.

Increase your calculated system size by about 20% to account for these losses.

In this example, the 2.1 kW system should be closer to 2.5 kW.



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Interested in charging your EV with the power of the sun?

Just give us a call.

#SFESOLARFRIDAY

Source: Solar Surge