

---

# **DIY Solar: Phone Chargers**

***Release 2.0***

**Demand Energy Equality**

**Feb 06, 2022**



CONTENTS:

1 Preface 1

1.1 Introduction . . . . . 1

1.2 Notes . . . . . 1

1.3 License . . . . . 1

2 Before starting 3

2.1 Staying safe . . . . . 3

2.2 Tools and materials . . . . . 3

2.3 How to solder . . . . . 3

3 Building the panel 5

3.1 Step 1: Soldering tabbing wire to the top of the cells . . . . . 5

3.2 Step 2: Preparing the polycarbonate and placing the cells . . . . . 5

3.3 Step 3: Heating the EVA to stick the cells . . . . . 5

3.4 Step 4: Tabbing the other side of the cells . . . . . 5

3.5 Step 5: Cross tabbing . . . . . 5

3.6 Step 6: Encapsulation . . . . . 5

3.7 Step 7: Bonding the panel into the neoprene case . . . . . 5

3.8 Step 8: Attach USB DC-DC voltage converter . . . . . 5

4 Appendix 1: Sourcing materials (and possible alternatives) 7

4.1 Solar cells . . . . . 7

4.2 Polycarbonate . . . . . 7

4.3 EVA . . . . . 7

4.4 Tabbing wire . . . . . 7

4.5 Flux pens . . . . . 7

4.6 DC converters . . . . . 7

4.7 USB Battery packs . . . . . 7



**PREFACE**

**1.1 Introduction**

**1.2 Notes**

**1.3 License**



## BEFORE STARTING

### 2.1 Staying safe

### 2.2 Tools and materials

### 2.3 How to solder





## BUILDING THE PANEL

- 3.1 Step 1: Soldering tabbing wire to the top of the cells
- 3.2 Step 2: Preparing the polycarbonate and placing the cells
- 3.3 Step 3: Heating the EVA to stick the cells
- 3.4 Step 4: Tabbing the other side of the cells
- 3.5 Step 5: Cross tabbing
- 3.6 Step 6: Encapsulation
- 3.7 Step 7: Bonding the panel into the neoprene case
- 3.8 Step 8: Attach USB DC-DC voltage converter



## **APPENDIX 1: SOURCING MATERIALS (AND POSSIBLE ALTERNATIVES)**

**4.1 Solar cells**

**4.2 Polycarbonate**

**4.3 EVA**

**4.4 Tabbing wire**

**4.5 Flux pens**

**4.6 DC converters**

**4.7 USB Battery packs**