

# Spreadsheet Tool: Pick your renewable energy sources!

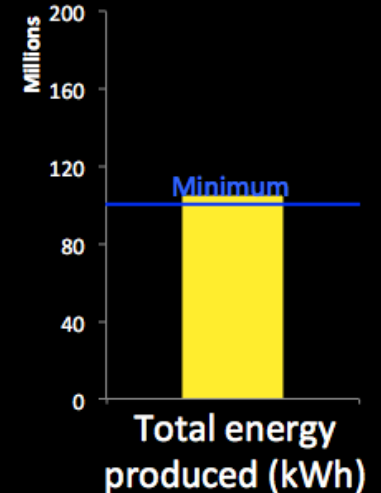
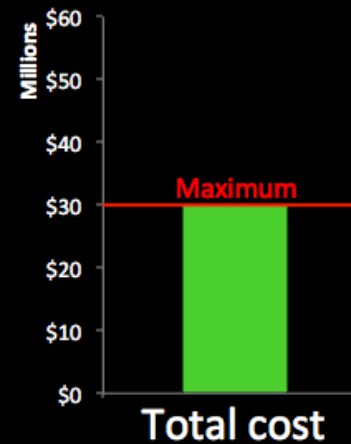
Fill in the **BLUE BOXES**. As you adjust the number of units you build, watch how the cost and energy production change.

Be sure to stay under budget and produce *at least* the minimum amount of energy needed to power Solutionville!

Pay attention to the **pink boxes**, which will tell you how much total space you will need for each technology.

	Small geothermal power plant	Wind turbine	Solar roof array	Hydroelectric dam
Fill in the number of units you want to build:	<u>1</u>	<u>4</u>	<u>240</u>	<u>1</u>
<b>Energy Production (kWh)</b>				
per unit built	70,000,000	6,000,000	30,000	4,000,000
TOTAL energy produced	70,000,000	24,000,000	7,200,000	4,000,000
<b>Building costs (\$)</b>				
per unit built	\$10,000,000	\$3,000,000	\$25,000	\$2,000,000
TOTAL cost	\$10,000,000	\$12,000,000	\$6,000,000	\$2,000,000
<b>Land/water space requirements</b>				
per unit built	1 square miles	0.25 square miles	1 roof	0.25 miles along a river
TOTAL space requirements	1 square miles	1 square miles	240 roofs	0.25 miles along a river

	Required	MY PLAN	Difference
Solutionville's energy budget (per year)	\$30,000,000	\$30,000,000	\$0 ✓
Solutionville's energy production (kWh per year)	100,500,000	105,200,000	4,700,000 ✓



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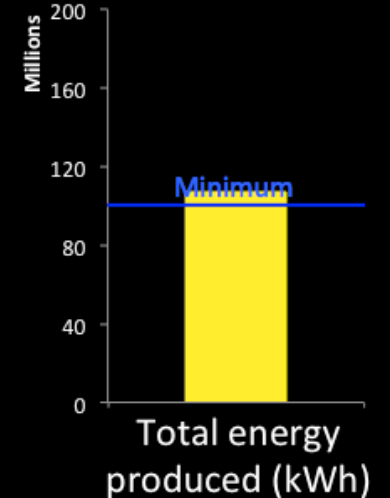
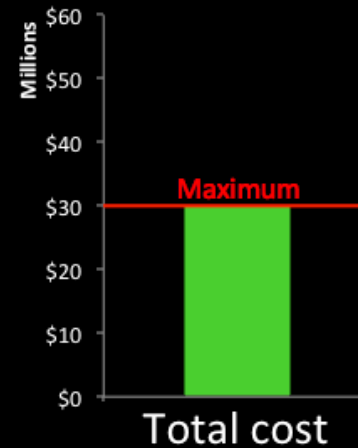
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Pay attention to the **pink boxes**, which will tell you how much total space you will need for each technology.

	Small geothermal power plant	Wind turbine	Solar roof array	Hydroelectric dam
Fill in the number of units you want to build:	<u>1</u>	<u>6</u>	<u>80</u>	<u>0</u>
<b>Energy Production (kWh)</b>				
per unit built	70,000,000	6,000,000	30,000	4,000,000
TOTAL energy produced	70,000,000	36,000,000	2,400,000	0
<b>Building costs (\$)</b>				
per unit built	\$10,000,000	\$3,000,000	\$25,000	\$2,000,000
TOTAL cost	\$10,000,000	\$18,000,000	\$2,000,000	\$0
<b>Land/water space requirements</b>				
per unit built	1 square miles	0.25 square miles	1 roof	0.25 miles along a river
TOTAL space requirements	1 square miles	1.5 square miles	80 roofs	0 miles along a river



	Required	MY PLAN	Difference
Solutionville's energy budget (per year)	\$30,000,000	\$30,000,000	\$0 ✓
Solutionville's energy production (kWh per year)	100,500,000	108,400,000	7,900,000 ✓



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Pay attention to the **pink boxes**, which will tell you how much total space you will need for each technology.

	Small geothermal power plant	Wind turbine	Solar roof array	Hydroelectric dam
Fill in the number of units you want to build:	<u>1</u>	<u>6</u>	<u>0</u>	<u>1</u>
<b>Energy Production (kWh)</b>				
per unit built	70,000,000	6,000,000	30,000	4,000,000
TOTAL energy produced	70,000,000	36,000,000	0	4,000,000
<b>Building costs (\$)</b>				
per unit built	\$10,000,000	\$3,000,000	\$25,000	\$2,000,000
TOTAL cost	\$10,000,000	\$18,000,000	\$0	\$2,000,000
<b>Land/water space requirements</b>				
per unit built	1 square miles	0.25 square miles	1 roof	0.25 miles along a river
TOTAL space requirements	1 square miles	1.5 square miles	0 roofs	0.25 miles along a river

	Required	MY PLAN	Difference
Solutionville's energy budget (per year)	\$30,000,000	\$30,000,000	\$0 ✓
Solutionville's energy production (kWh per year)	100,500,000	110,000,000	9,500,000 ✓

