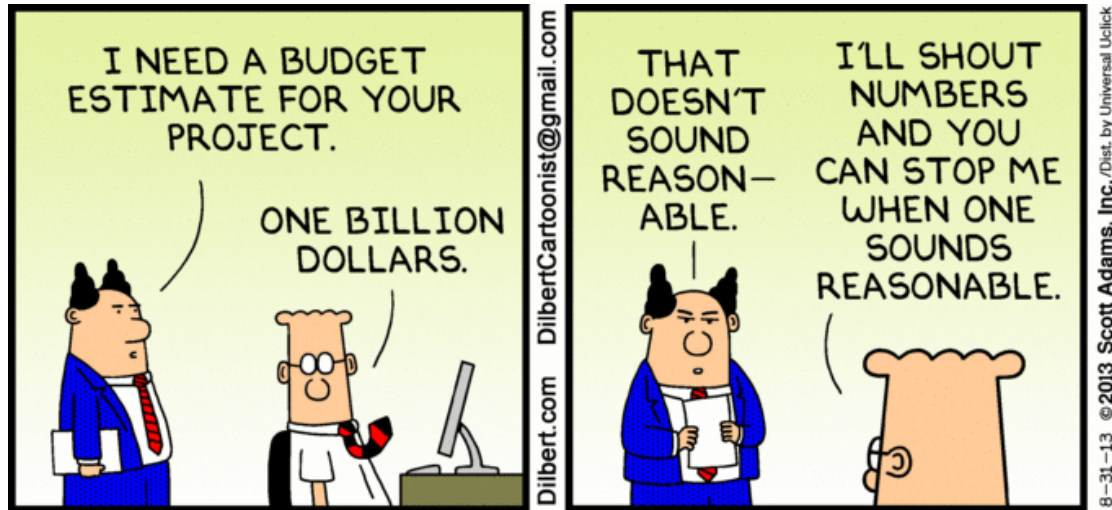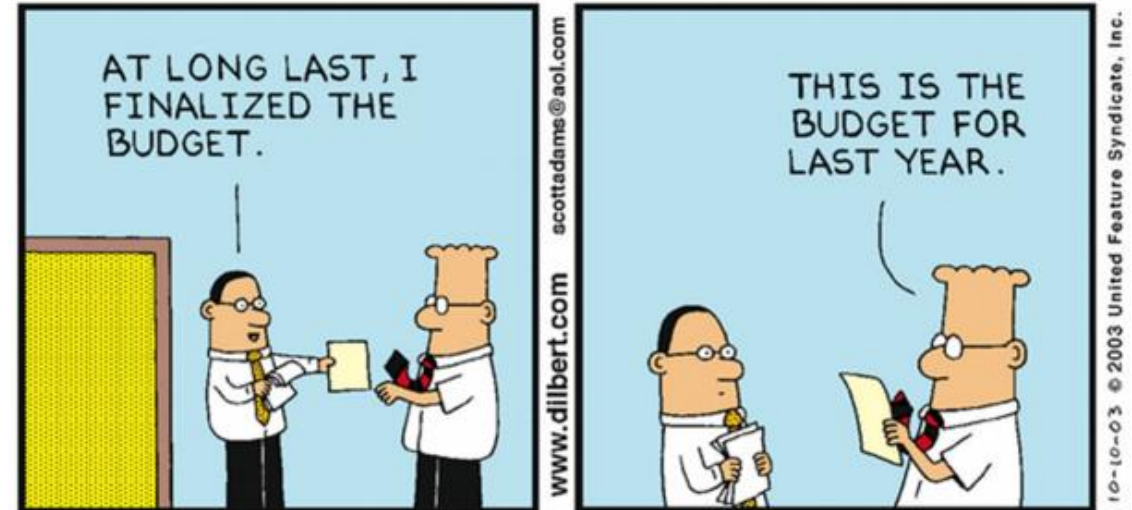# SOLAR CAR PROJECT BUDGETING

Linda Bozarth & Gail Lueck | January 15, 2023

CAN YOU RELATE?

VS.

DISCLAIMER

- Today, we are going to avoid either extreme
    - "I have no idea, so here is a wild guess…"
    - "I won't know if we are on budget until all of the numbers come in."

- There are multiple ways to put together a budget
    - Consider today a discussion of principles that can be implemented in various ways
    - Think through what will work for you and your team (and if it's not working, try something different!)

WHAT IS A BUDGET?

- An estimate of income and expenses for a project or a set period of time
  - Educated guess
  - Money coming in
  - Money going out
  - Defined scope

GOAL
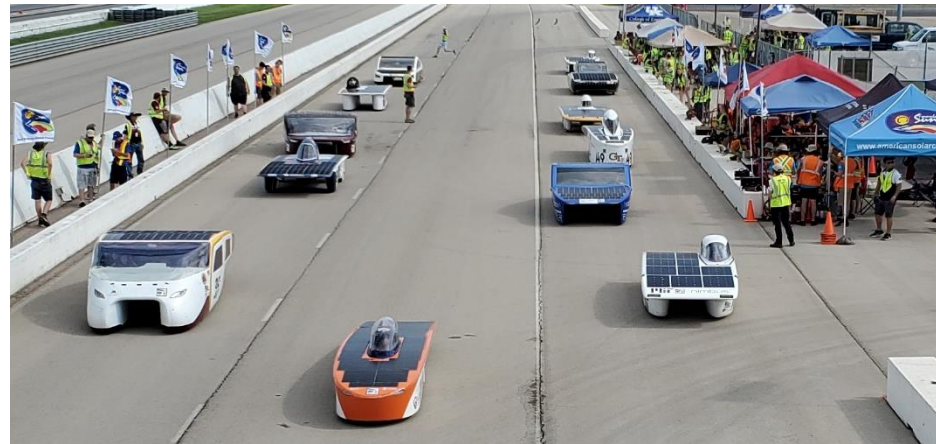
Income

– Expenses
_____

Breakeven –OR–

Profit (that can be put towards the next project)

STARTING THE BUDGET DISCUSSION

STEP 1: DEFINE YOUR "PROJECT"

- Calendar or fiscal year

- Design/build/race the solar car

- Design/build of the solar car

- Race the solar car

EXPENSES

- Costs associated with the solar car design/build
  - Solar cells, encapsulation, batteries, motor, chassis manufacturing, electronics, seat belt, brakes, lights, wheels, tires, steering wheel, decals/wrap/paint, windshield, …

- Costs associated with going on the event (FSGP/ASC)
  - Entry fees, trailer, vehicles, fuel, lodging, meals, cooking equipment, coolers, uniforms, safety vests, first aid/CPR training, pop-up tent, ballast, CB radios, amber lights, …

- Not sure where to start?
  - The regulations can help you think through needed items!

EXPENSES CONTINUED…

- In addition to the costs associated with the design/build of the car and going on the event, have you considered expenses for:
  - Testing/route drives/practice runs
  - Sponsorship (recognition benefits, mailings, etc)
  - Shipping/postage
  - Equipment repair/replacement
  - Conference fees
  - Services/subscriptions (project management, communications, bookkeeping, etc)
  - Facilities, insurance, etc
  - Public relations events
  - Team nights, shop fridge, etc

ADD CONTINGENCY

- **This is your safety factor!**
  - Add AFTER you have factored in your anticipated expenses

- **Think in terms of a percentage of total expenses**
  - $100,000 + 10% contingency = $110,000 budget

- **How much should the percentage be?**
  - Depends on how confident you are in the estimated expenses!
  - Recommend a minimum of 10-15%
  - Lower confidence = higher %

Contingency Factor

INCOME

- University funds/phon-a-thon
- Sponsorships (financial, in-kind)
- Donation programs (adopt-a-cell, giving days/challenges, etc)
- Team member fee

- Fundraisers
- Merchandise for sale/donation
- Selling off old car, parts, etc
- Public relations events (paid to display/reimburse travel)

GETTING TO THE KEY NUMBERS

1 How much would it take to do this project?

Total Estimated Expenses (with contingency)

- Total Estimated Income (conservative)
_____

Amount to fundraise/get in-kind/reduce expenses

2 Where are we at? Look at the budget strategically and make the hard decisions.

THE BUDGET IS A LIVING DOCUMENT

Item	Draft Budget	Notes/Assumptions
Expenses		
Car Design/Build	$100,000	Detail in sub-items
Race Logistics	$40,000	Detail in sub-items
Testing Trips	$10,000	Detail in sub-items
Etc	$50,000	Detail in sub-items
Expense Total	$200,000	
Contingency	$50,000	25%
Total Est Expenses	**$250,000**	
Income		
Sponsorships/Donations	$80,000	XYZ, Awesome Solar, University Fund
Team Member Fees	$1,000	50 team members x $20
Etc		Detail in sub-items
Total Est Income	**$81,000**	
Net Income after Exp	**($169,000)**	

The
Draft Budget
- Defines the project
- Categorizes expenses and income
- Notes assumptions to support estimates
- Includes contingency

THE BUDGET IS A LIVING DOCUMENT

Item	Approved Budget	Working Budget	Actuals	Notes/Assumptions
Expenses				
Car Design/Build	$100,000			Detail in sub-items
Race Logistics	$40,000			Detail in sub-items
Testing Trips	$10,000			Detail in sub-items
Etc	$50,000			Detail in sub-items
Expense Total	$200,000			
Contingency	$50,000			25%
Total Est Expenses	**$250,000**			
Income				
Sponsorships/Donations	$80,000			XYZ, Awesome Solar, University Fund
Team Member Fees	$1,000			50 team members x $20
Etc				Detail in sub-items
Total Est Income	**$81,000**			
Net Income after Exp	**($169,000)**			

The **Approved Budget** focuses on the **Total Estimated Expenses**

THE BUDGET IS A LIVING DOCUMENT

Item	Approved Budget	Working Budget	Actuals	Notes/Assumptions
Expenses				
Car Design/Build	$100,000	$86,000		Detail in sub-items
Race Logistics	$40,000	$40,000		Detail in sub-items
Testing Trips	$10,000	$12,000		
Etc	$50,000	$30,000		
Expense Total	$200,000	$167,000		
Contingency	$50,000	$33,000		
Total Est Expenses	**$250,000**	**$201,000**		
Income				
Sponsorships/Donations	$80,000	$150,000		...versity Fund
Team Member Fees	$1,000	$1,200		
Etc		$50,000		
Total Est Income	**$81,000**	**$201,200**		
Net Income after Exp	**($169,000)**	**$200**		

> The **Working Budget** focuses on the **Amount Over Budget** (close the gap by fundraising/in-kind gifts and reducing expenses)

THE BUDGET IS A LIVING DOCUMENT

Item	Approved Budget	Working Budget	Actuals	Notes/Assumptions
Expenses				
Car Design/Build	$100,000	$86,000	$90,000	
Race Logistics	$40,000	$40,000	$50,000	
Testing Trips	$10,000	$12,000	$12,000	
Etc	$50,000	$30,000	$28,000	D
Expense Total	$200,000	$167,000	$180,000	
Contingency	$50,000	$33,000		2
Total Est Expenses	**$250,000**	**$201,000**	**$180,000**	
Income				
Sponsorships/Donations	$80,000	$150,000	$150,000	X
Team Member Fees	$1,000	$1,200	$1,200	50 team members x $20
Etc		$50,000	$50,000	Detail in sub-items
Total Est Income	**$81,000**	**$201,200**	**$201,200**	
Net Income after Exp	**($169,000)**	**$200**	**$21,200**	

> The **Actuals** are reporting your **End of Project Bookkeeping** (and can help you set your next budget)

BUDGETING TIPS

- Budget an expense even if expecting a donation

- Keep the working budget as accurate as possible
  - May want to color code what has been spent versus what is still estimated

- Consider must-haves vs. nice-to-haves when managing the budget
  - Address must-haves first
  - Leave nice-to-haves for if there is budget left

- Budgeting is not a stand-alone activity
  - Work with the sponsorship team & the sub-teams spending the funds to determine what is best for the project as a whole

- Don't spend money you don't have

DISCUSSION TIME

- Share a link to/copy of your budget (with or without numbers)

- Discussion questions:
  - What has worked for your team?
  - What has been the biggest challenge related to your budget?
  - What other questions do you have for this group?