



Financing Biochar Production Facilities:
Financing in Practice

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BUILDING BLOCKS OF BIOCHAR PROJECT FINANCE

THE CAPITAL STACK:



EQUITY FINANCING

CARBON REMOVAL
CREDIT PRE-PURCHASE

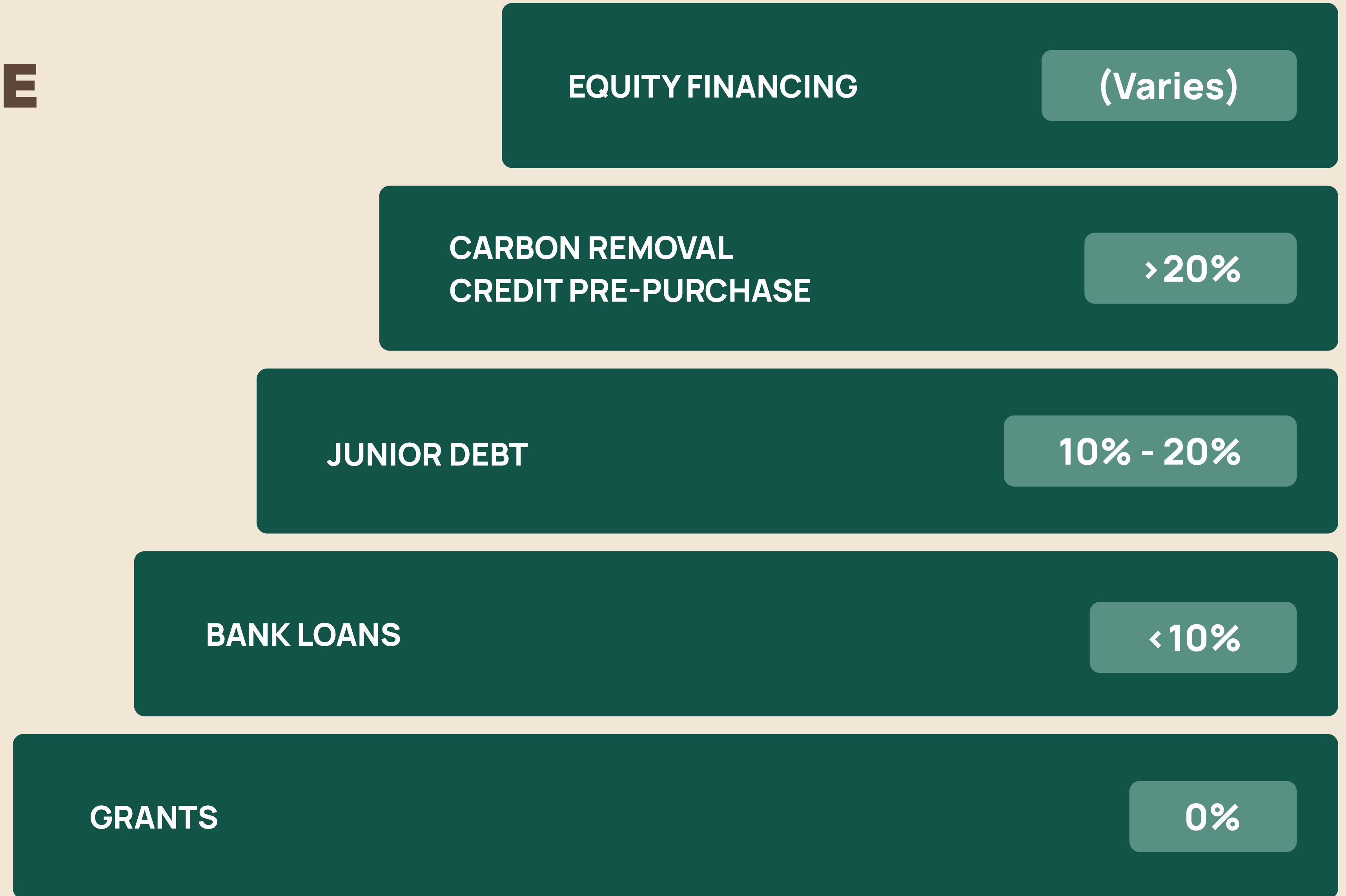
JUNIOR DEBT

BANK LOANS

GRANTS

BUILDING BLOCKS OF BIOCHAR PROJECT FINANCE

THE COST OF CAPITAL:



OPTIONS WITHIN THE CAPITAL STACK

EQUITY FINANCING

	Philanthropic	Private Equity	Venture Capital
Multiple in invested capital target	1x to 2x	2x to 4x	5x to 10x+

PRE-PURCHASE

Model	Direct to business	Credit sales through partner	Credit streaming agreement
Credit Price in comparison to Market (i.e. CORCX index)	Discount to market prices	Discount to market prices, commission paid to sales partner	Cash up front for credit representation; you receive a royalty on realized price
Speed	Slow, one corporate buyer	Faster, sometimes multiple buyers	Fastest, pre-secured demand

JUNIOR DEBT

Generally uncommon

BANK LOANS

Most common types:

USDA Rural Development

USDA Business & Industry

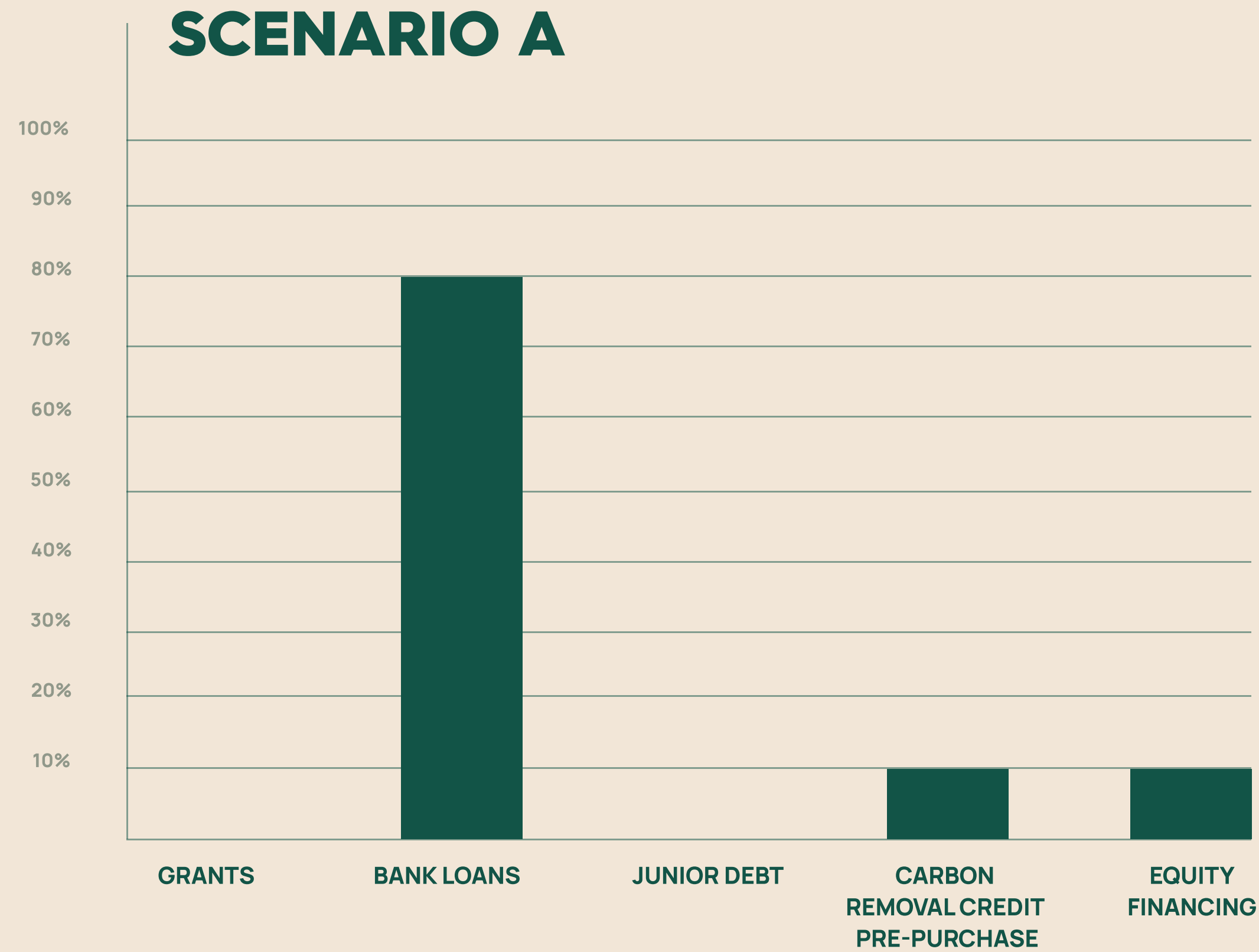
Small business administration (SBA) Loans

GRANTS

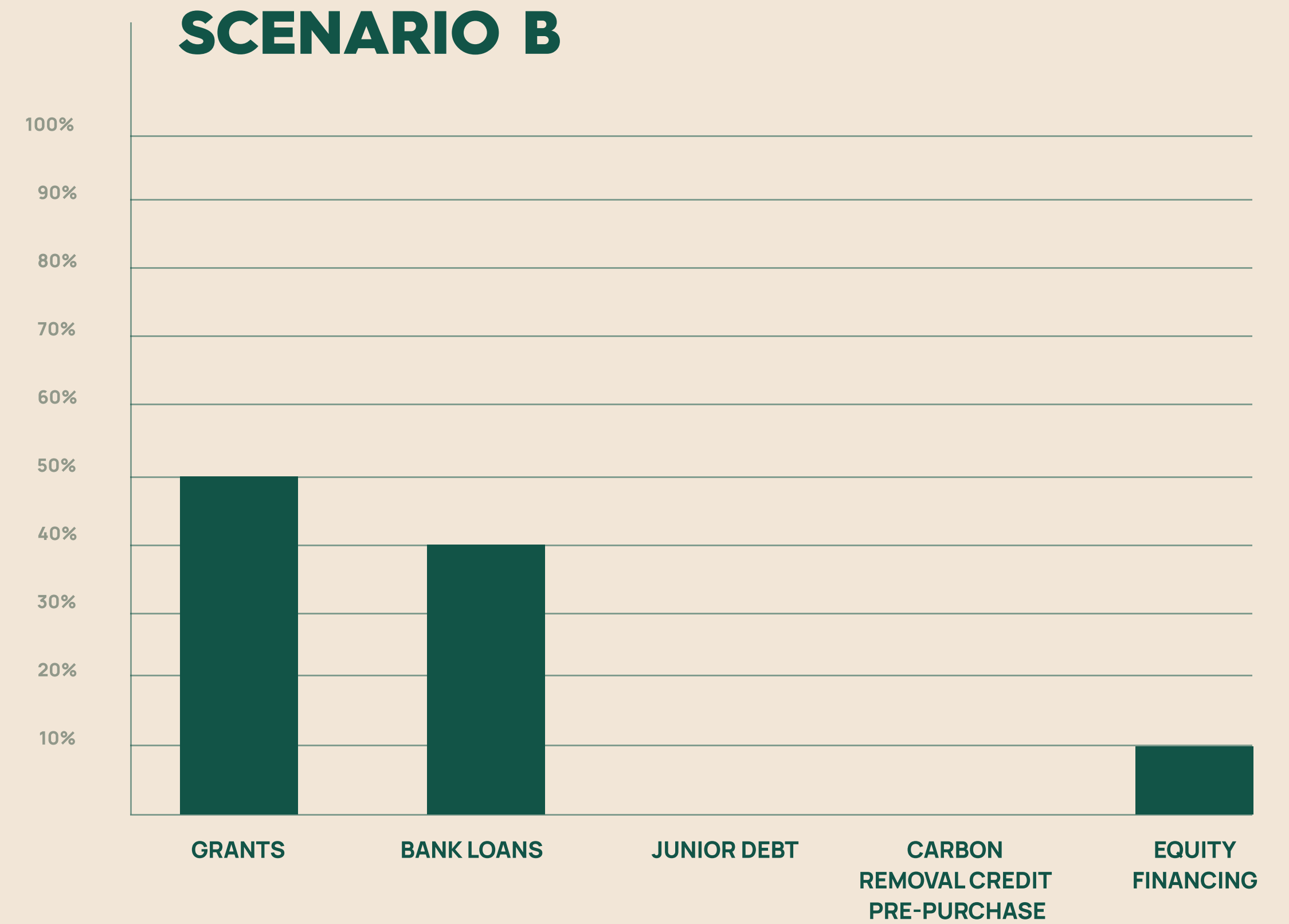
Opportunities are project specific.
Here are some great resources

Resources: [US Forestry Service](#), [Open Grants](#), [Grants.gov](#), [SBIR.gov](#), [stateincentives.org](#), the EPA, [Climateworks.org](#)

WHAT WORKS? THE RIGHT MIX!



Banks loan with 20% capital from Equity & Carbon Removal Credit Pre-Purchase



Grants with matching funds

FINANCING IN PRACTICE*

***The following examples are drawn from experience and designed to illustrate the discussed concepts. No specific project is the subject in either scenario.**

SCENARIO A - EXAMPLE

In this example, a food processing plant plans to convert peels and other food waste residues into biochar. They plan to install a stationary pyrolysis unit to manage the total food residues produced by the facility.

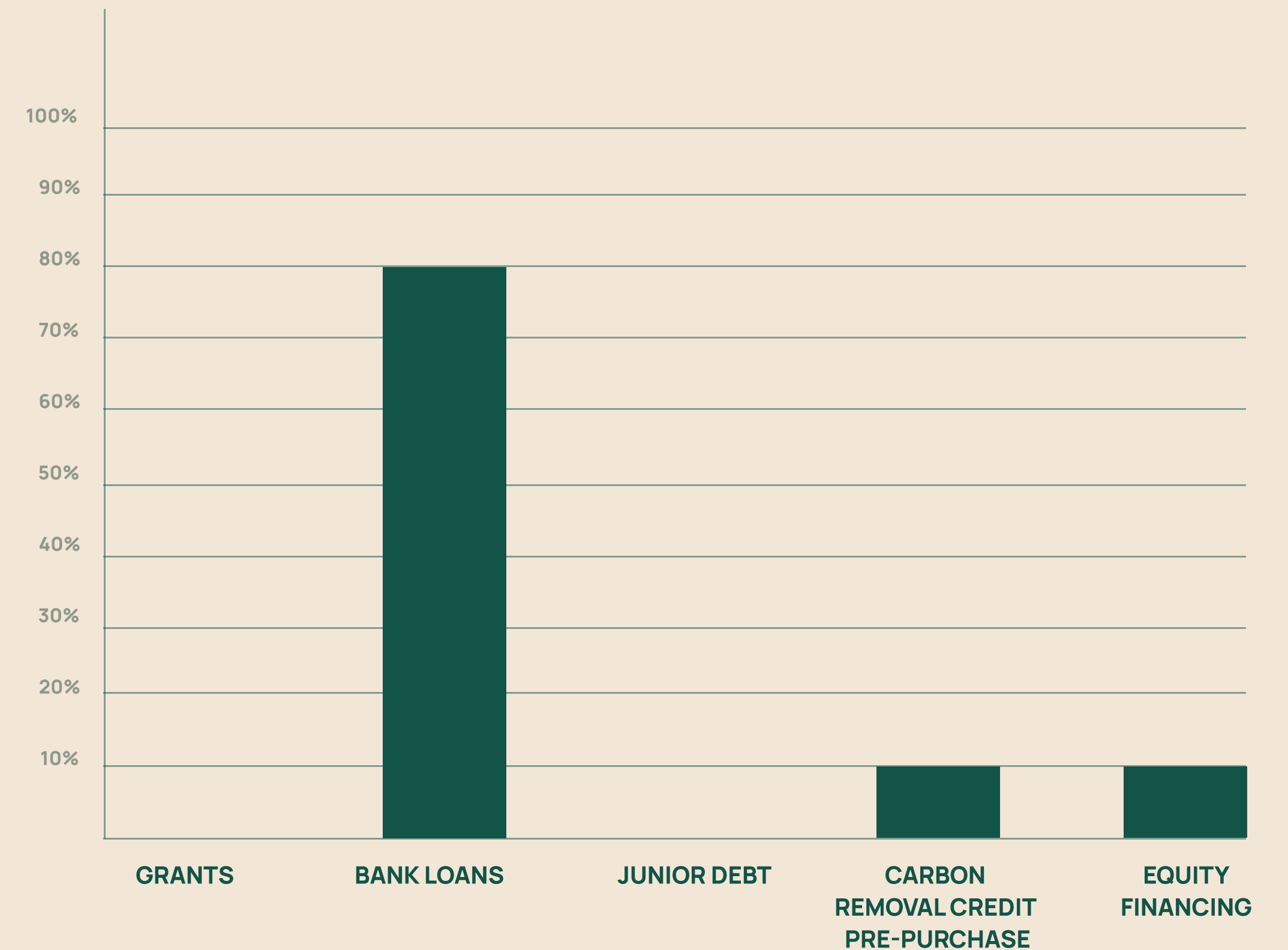
USES:

Cost category	Planned investment
Pyrolysis Equipment	\$ 2,200,000
Construction Expenses	\$ 1,000,000
Operating Expenses, Year 1 (Feedstock, labor, maintenance, etc)	\$ 550,000
Land, insurance & carbon expenses - Year 1	\$ 250,000
Total	\$ 5,000,000

- Capital for the pyrolysis equipment, site build, and first year operations.

SOURCES:

Total Capital	Grant	Bank Loans	Junior Debt	Carbon Removal Credit Pre-Purchase	Equity Financing
\$5,000,000	\$ -	\$4,000,000	\$ -	\$500,000	\$500,000
	0%	80%	0%	10%	10%
		USDA Loan		Streaming Agreement	Private Equity



SCENARIO B - EXAMPLE

In this example, a company is working to remove forestry by-products generated by forest management activities. They are working in alignment with a statewide initiative to find new ways of preventing forest fires in their community.

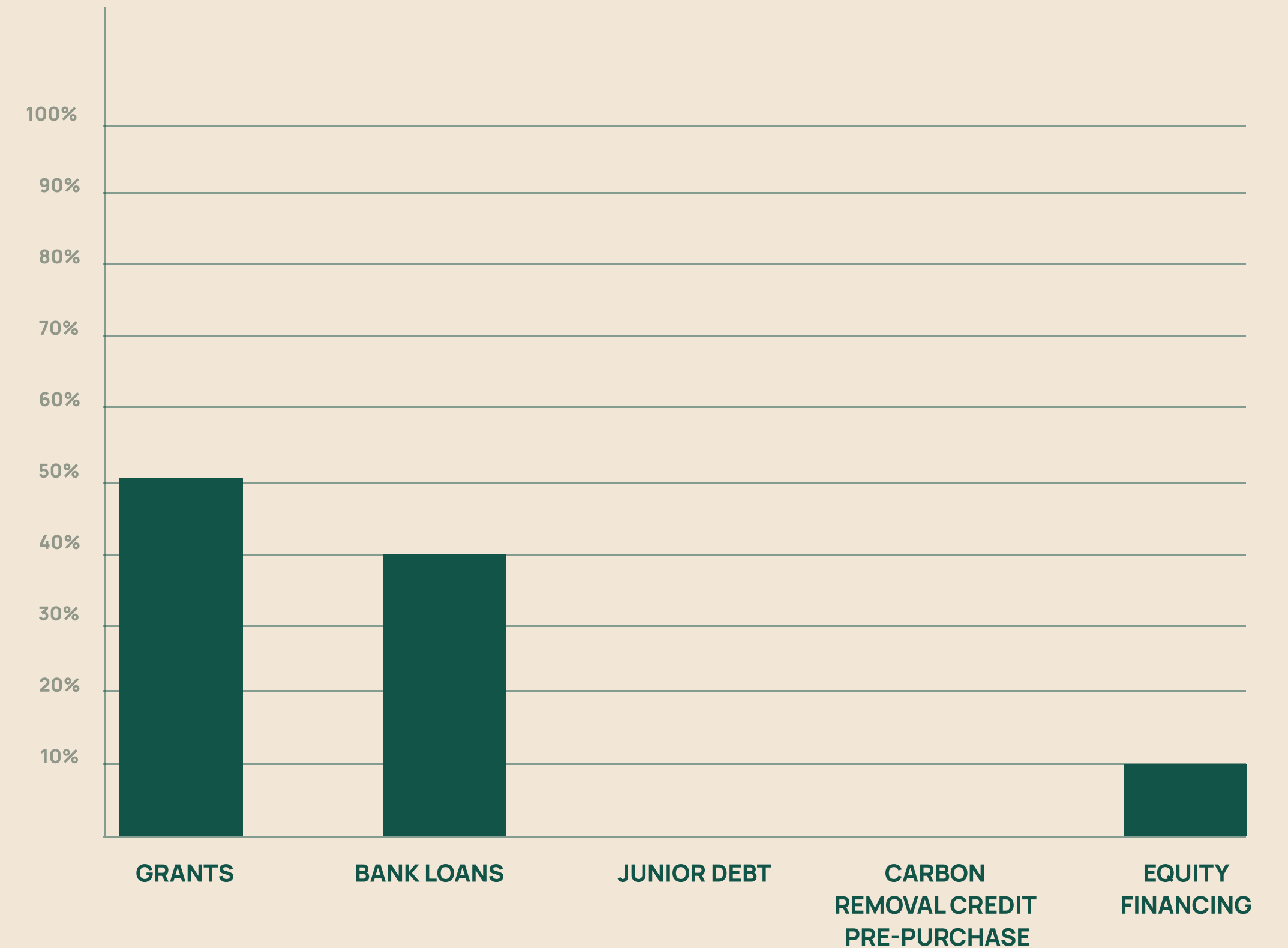
USES:

Cost category	Planned investment
Pyrolysis Equipment	\$ 1,000,000
Construction Expenses	\$ 125,000
Operating Expenses, Year 1 (Feedstock, labor, maintenance, etc)	\$ 650,000
Land, insurance & carbon expenses - Year 1	\$ 225,000
Total	\$ 2,000,000

- Capital for a mobile pyrolysis unit, storage facilities, and first year operations

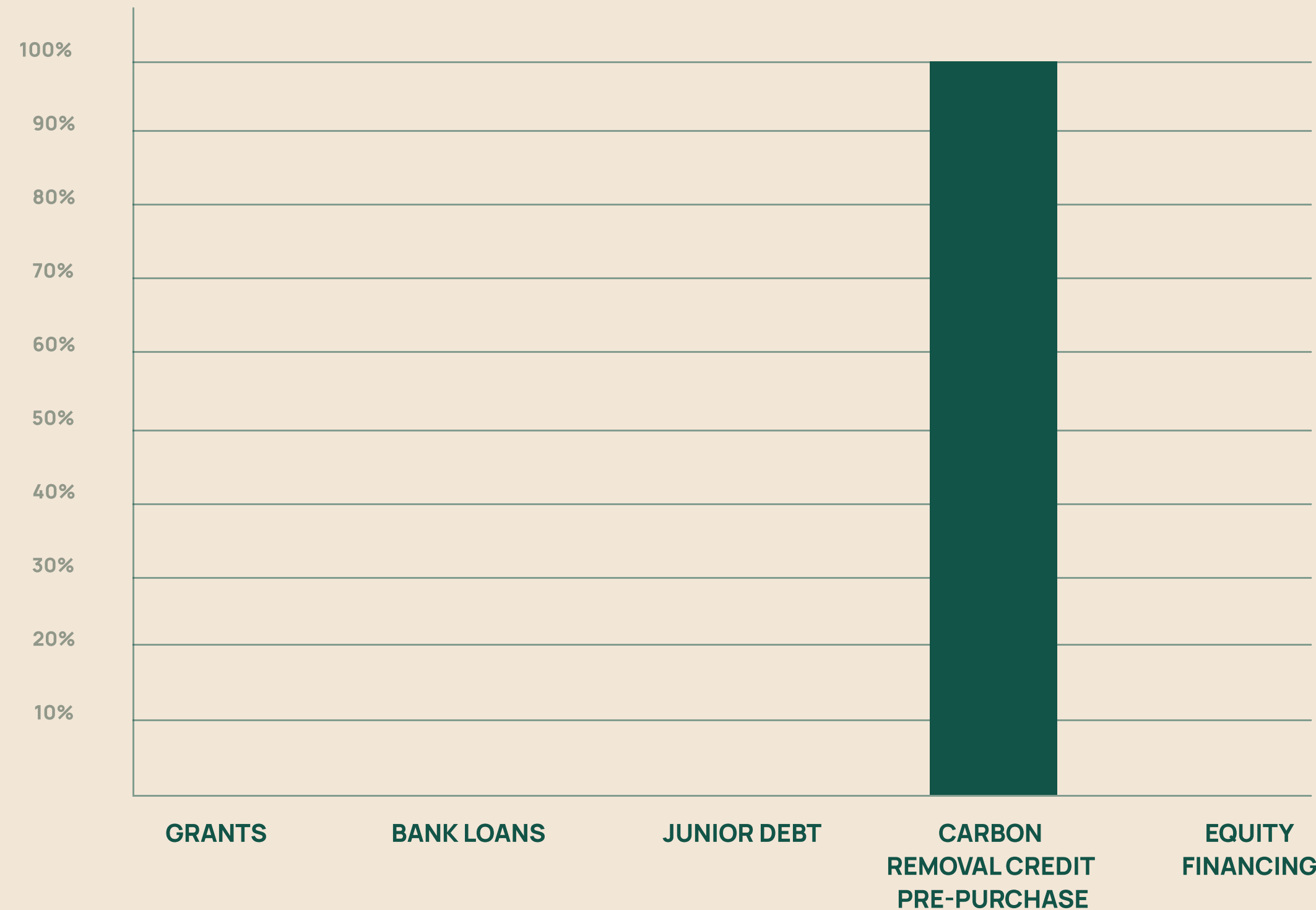
SOURCES:

Total Capital	Grant	Bank Loans	Junior Debt	Carbon Removal Credit Pre-Purchase	Equity Financing
\$2,000,000	\$1,000,000	\$800,000	\$ -	\$ -	\$200,000
	50%	40%	0%	0%	10%
	US Forestry Innovation Grant	Small Business Admin. (SBA) Loan			Philanthropic Capital



WHAT DOESN'T WORK TODAY?

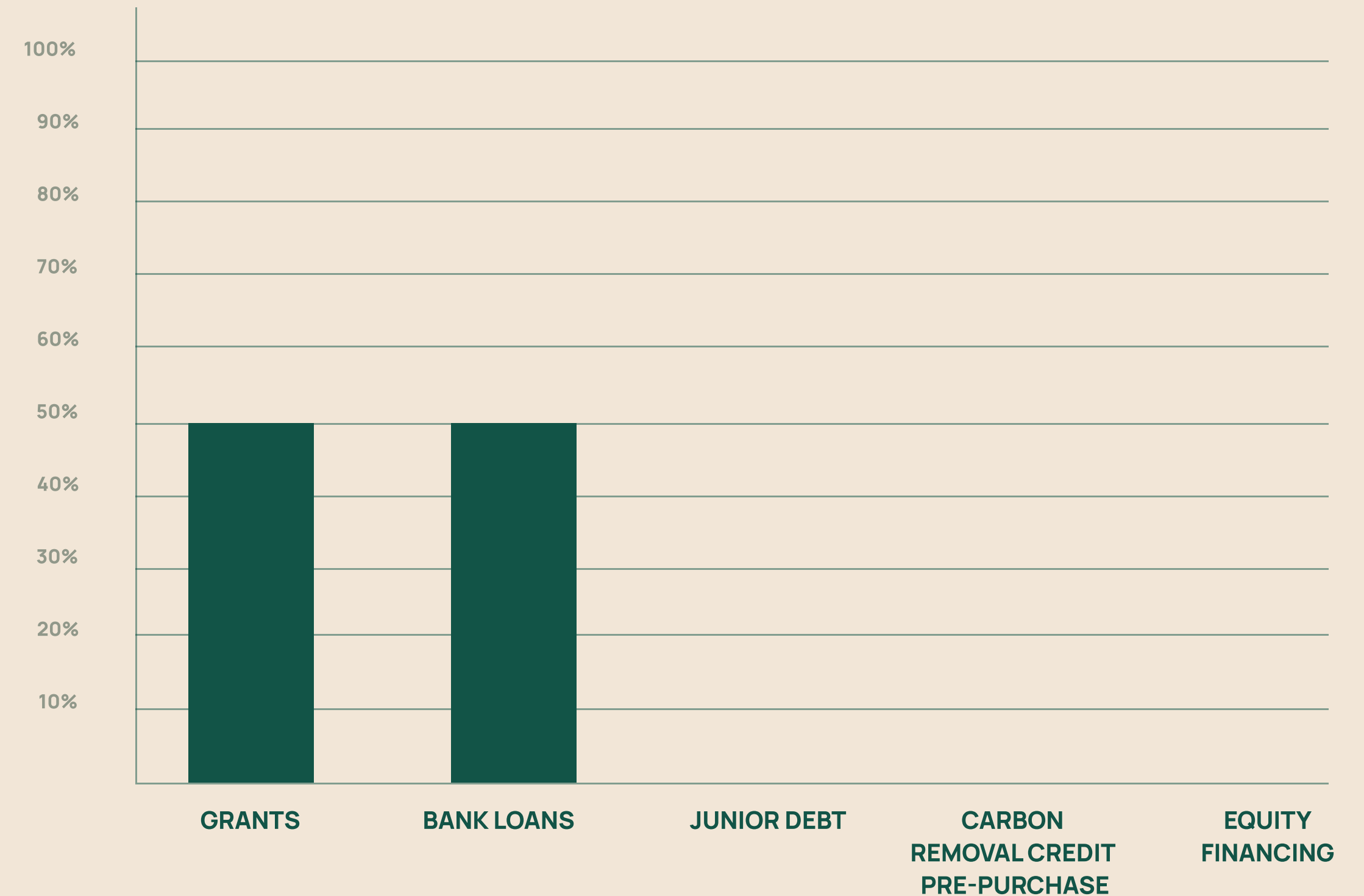
100% pre-purchase



WHY?

Too much risk for a buyer at the current market price points. There are no other stakeholders ensuring the project is executed and delivers credits on time and according to plan.

50% grant with matching funds / 50% bank loan



WHY?

It creates a perpetual loop of waiting for the other to go first:

- Banks have different requirements on how much capital you must have on-hand before issuing a loan.
- Grants will want to have matching funds allocated to the awardee before issuing grant capital

WHAT DOESN'T WORK TODAY?

1. SUPPLY CHAIN: Don't just show you have access to feedstock or a property with photos, get documented proof

- a. Historical production logs showing waste material
- b. Legal documents showing your right to the feedstock
- c. Contract written by legal counsel experienced in biomass procurement

2. EQUIPMENT: Select your equipment first. Build a plan for the capital you will need and stick to it. Don't have multiple equipment options based on the money you think you could raise. Why?

- a. Investors see a lack of commitment to a plan as uncertainty. Investors like certainty and to invest in a committed plan.
- b. Technologies are at different stages of market maturity. Introducing "unproven" technology will create additional uncertainty, even if presented as an option.

3. BIOCHAR OFFTAKE: Don't assume your targeted farmers are aware of Code 808 and willing to apply your char.

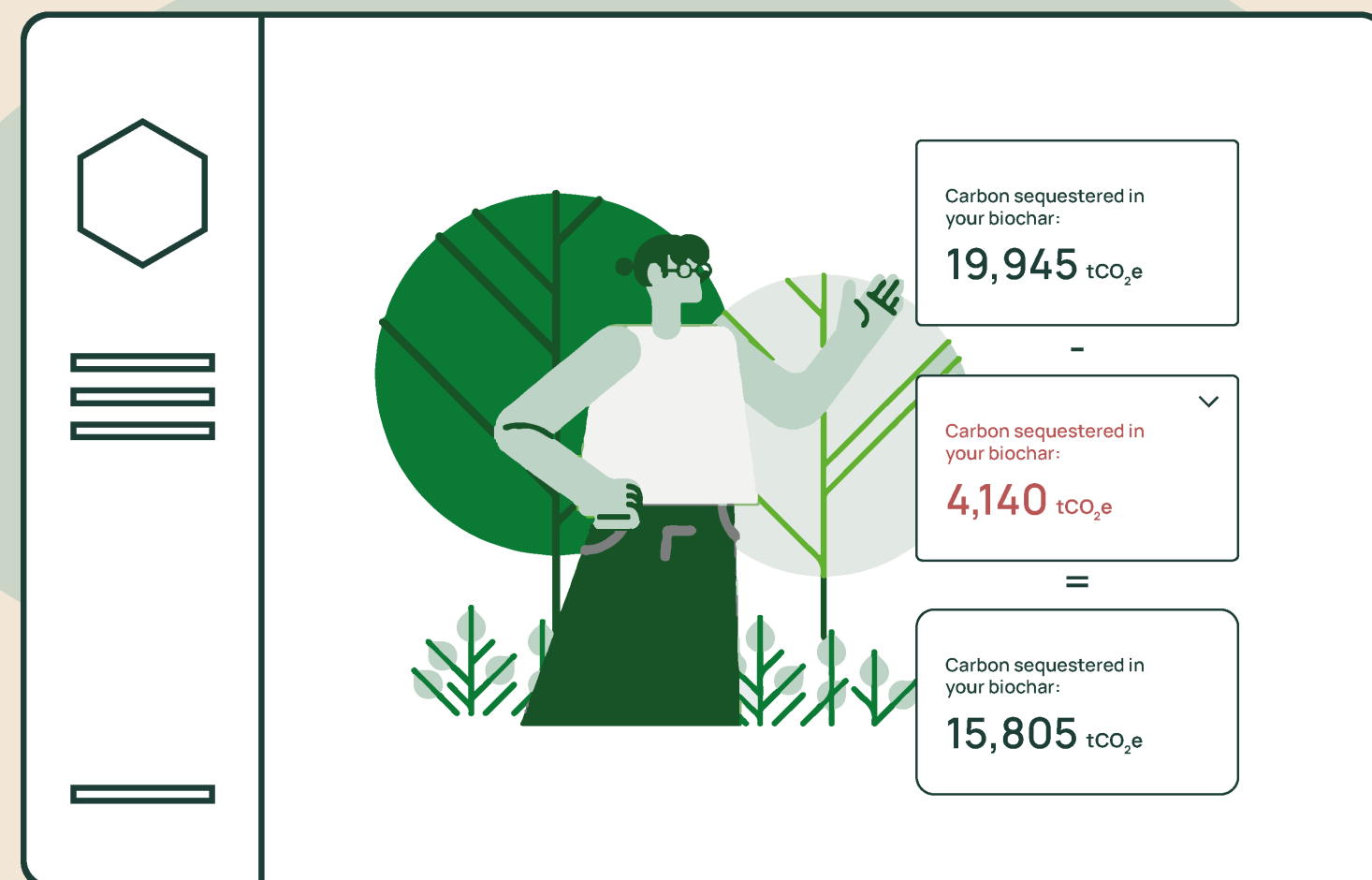
- a. Connect with local universities working on soil amendment research.
- b. Join local working groups of farmer communities to participate in education about the uses of biochar.

4. CARBON CREDITS: Investors are looking for assurance that the project revenues will be generated and/or are secured

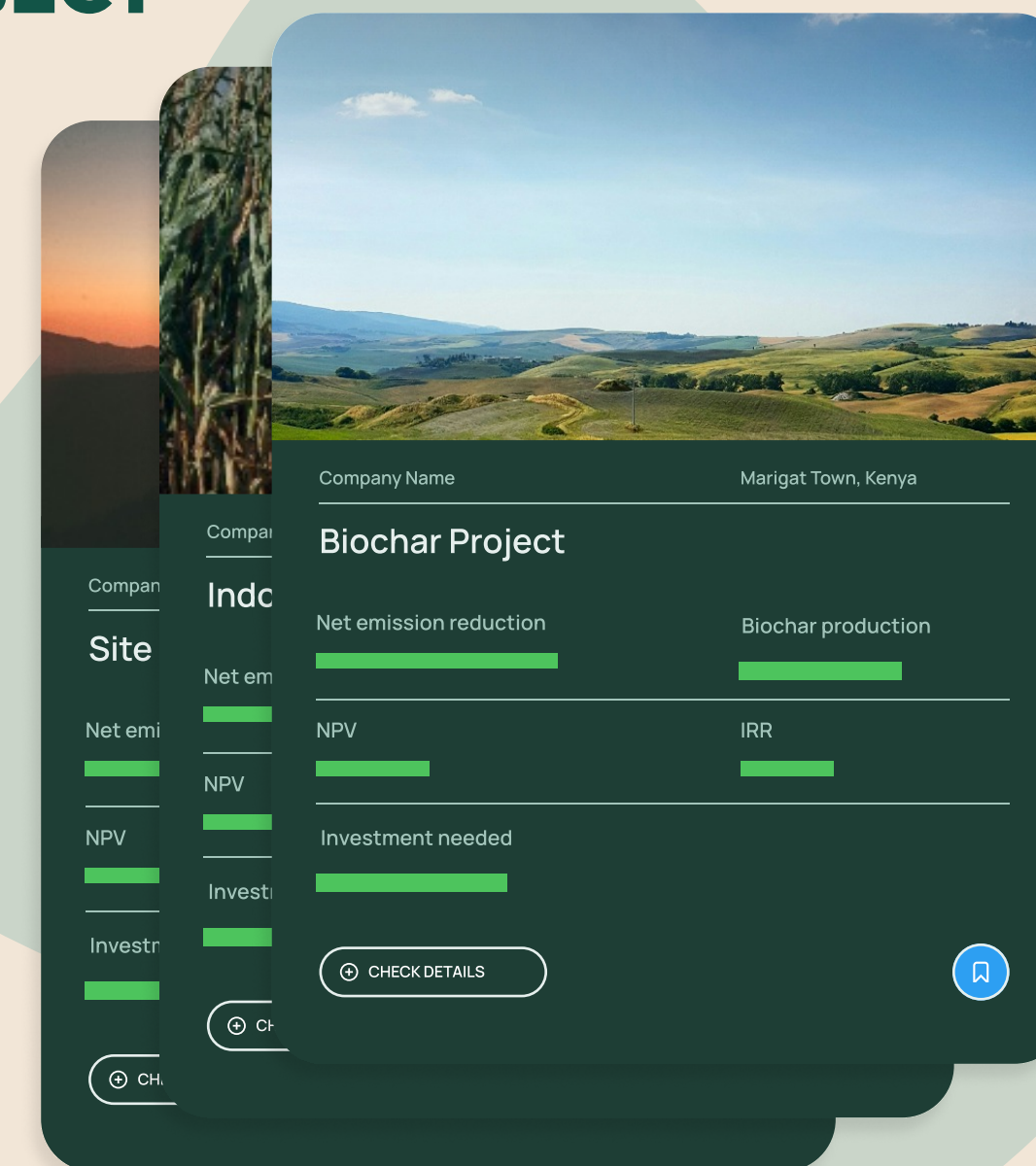
Partner with a carbon expert who can support your carbon needs and communicate with investors

READY TO BUILD YOUR CAPITAL STACK?

GHG CALCULATOR & PROFITABILITY



PUBLISH YOUR PROJECT



COME BY THE BOOTH FOR A GRAIN DEMO!

Q&A