

Projects List

1 - gasifier / producer gas generator / wood gas generator:

Biomass/Wood fired producer gas generator (approx. 300 BTU/ft³) to fuel an internal combustion engine or burner. water gas and carbureted water gas (using waster engine oil) generators. During WWII, half of vehicles in Europe used Charcoal as a fuel due to gasoline shortage.

2 - charcoal maker: to make charcoal from wood

3 - wood fired bread/pizza oven: cottage industry device to make bread outdoors with the use of wood fuel

4 - methane digester / biogas generator: anaerobic digester creating methane fuel gas (approx. 600 BTU/ft³) from garden and animal waste products

5 - compost tea production
comfrey/nettle compost tea production and use

6 - struvite production

7 - grass cow manure production: anaerobic fermentation process of putting green, freshly mowed grass in a plastic bag to allow it to ferment into 'cow manure'. use as fertilizer and input for methane digester.

8 - used oil stove: metal stove from 1/10" steel plate and angle to burn used oil and water dripping onto burner unit, a venturi type stove. (Lt. Col F. Evans describes a burner for disposing of waste lubricating oil. Model Engineering, 10 Nov 1955)

<http://selfrelianceclub.com/HEAT%20FROM%20USED%20OIL%20master%20document.pdf>

9 - red worms project: use red worms to process kitchen and yard waste into high quality fertilizer (worm castings).

10 - biochemical fuel cell using compost pile/worm bed for electricity generation

11 - Hugelkultur bed – encase soil on current bed (using old logs, etc.) and plant with cereal rye to create massive root system (5000 miles of root-hairs per plant per season) and suppress weeds.

see: <https://www.permaculture.co.uk/articles/many-benefits-hugelkultur>

Raised beds over tree stumps to help rot out stumps and provide growing space not previously available.

12 - Laminar flow hood – supports tissue culture process (to produce a lot of plant material in a short period of time.)

13 - mass rocket stove / masonry stove / volcano stove - build 5 gal bucket size with 4" pvc piping and concrete to demonstrate process and use as small stove for cooking, etc. Add perlite/vermiculite to lighten weight of stove.

<https://www.offthegridnews.com/how-to-2/diy-a-10-indestructible-off-grid-cooking-stove/>

Gravity-feed water-heating option with copper pipe coil embedded in heater concrete.
solar cookers
fireless cooker

14 - solar heater – water and air - design and build solar heater to heat both air and water in solar chamber.

15 - outdoor wood heater / Furnace– water - build outdoor water heating furnace to pump water into coil in furnace plenum for supplemental heat.

16 - thermionic generator – design and build thermionic generator to use waste heat from outdoor furnace and gasifier, also mass rocket stove to produce electricity for small draft induction fan, etc. Seebeck and Peltier cooling modules for heat refrigeration.
Thermionic electric generation with thermoelectric cooling module for solar cooling.

17 - water feature: create flowing water stream to support plants of watercress, horsetail grass and cattails, also water source for bees, etc.

18 - well pump pit access - clean out, pull pump and use air lift system to extract water for garden use and emergency supply, develop multi-stage system to retrieve water from below 33 foot depth.

19 - fanning mill / winnower- build small fanning mill to clean grain and seeds using small electric blower or hand-operated forge blower

http://selfrelianceclub.com/farm_scale_winnower.pdf

20 - hammermill – design and build small hammermill to chip brush and leaves, etc. Gasoline and electric operated.

21 - flux core wire welder use – plant supports, wire shelving,

22 - hard apple cider production for acv production

23 - Meat and food projects:

yellow perch project

rabbit meat project

guinea pig project

milk/meat goat production

cheesemaking

tempeh production without soybeans

lacto-fermentation of vegetables

24 - hay/straw resourcing (He who buys hay, buys land (and water))

25 - Pollinator projects:

black soldier flies
blue bottle flies
bumble bee houses from #10 cans
Blue orchard mason bee houses, for leaf cutter bees too

26 - sourdough and perpetual yeast project

27 - hot and cold soap making process

28 - herbal ointment production

29 - make oil press for cooking oil, cider pressing and tincture production

30 - soil blocker design and construction

31 - silica gel solar air conditioner – the hotter the temperature, the better it works.

S.O.I.L. development (Seeds of Independence Library)

Web for local surplus food sources

EMP protection container

Duckweed water purification project

solar food/seed dryer using solar bubble and PV powered fan system.

calcium carbide arc furnace

acetylene generator

oxygen generator

blacksmith forge with hand blower, etc.

make smoker/grill

pasta diluent for fine seeds to sow thinly. Soak in compost tea fertilizer and growth stimulants and dry.

induction co-generation system – induction generator electricity production and waste heat recovery and utilization. Gasification or methane digester system supplying fuel gas

create 3 phase electricity on single phase input, rotary converter (induction motor)