

What is Energy Descent?

The concept of “energy descent” first appeared in the work of ecologists Odum and Odum in 2001. The idea was further developed by permaculture founder David Holmgren (2003), who said: “I use the term ‘descent’ as the least loaded word that honestly conveys the inevitable, radical reduction of material consumption and/or human numbers that will characterize the ... decades and centuries of [fossil fuel decline].”

When we take action to reduce our energy use, we are creating a future where humans have successfully adapted to using less fossil fuel, while living more locally and becoming more resilient. This can be a more positive, and less painful change if we choose to make it so. Descent is a new frontier. We can approach it with zeal.

Transition Culture

Transition Network Website

<https://transitionnetwork.org/blogs/rob-hopkins>

<https://www.transitionculture.org/>

Totnes Energy Descent plan (example for communities)

<https://www.transitionculture.org/shop/totnes-edap/>

Post Carbon Institute - <http://www.postcarbon.org/>

Keeping abreast of fossil fuel depletion (complex)

<https://peakoil.com/>

Transition Twin Cities - www.transitiontwincities.org

This booklet was prepared for use in community ed classes by Leslie MacKenzie, Transition Longfellow/Transition Twin Cities. It is imperative that we make the shift away from fossil fuels as quickly as possible so please copy and share this booklet freely, crediting Leslie MacKenzie and Transition Twin Cities.

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Personal Energy Descent Plan

So you'd like to be more thoughtful about how you use energy resources. Or you want to reduce your carbon footprint, or your expenses. This booklet will help you identify where you are starting from and some of the steps you could take to move toward your goals ... first steps and the steps after that.

This booklet covers the major areas of everyday energy use in the home and transportation. It's not exhaustive; there are so many ways those of us living in developed nations can begin to reduce our energy consumption that it couldn't be covered in a quick booklet. But this will get you started.

Take a few weeks to pay attention to energy. Measure it. Write it down. Then use what you've learned to **create a plan for success**.

- Do you need to buy something? Set a date to do that.
- Will you need support? Find a friend or a group of friends who want to go on this journey with you.
- Worried about the barriers you think might stand in your way? Make a plan for how you can overcome them.

The most important thing you can do is make a start.

AREAS OF ACTION FOR ENERGY DESCENT

DIRECT AND PERSONAL ACTION

- Transportation
- Natural Gas
- Cooling & Refrigeration
- Lighting
- Appliances & Electronics
- Food & Cooking
- House Cleaning & Yard Care
- Whole House

INDIRECT ACTION

- Consumption
- Waste
- Learn more

What's Your Current Carbon Footprint?

Check out tools at:

- carbonfund.org,
- nature.org,
- carbonfootprint.com,
- myclimate.org.

You may want to try a few to get a full picture.

WHERE ARE YOU STARTING?

Take a look at your garbage cans and recycling containers. Everything in there took energy to make, to transport and possibly to use. Weigh or measure your garbage for a week or a month and see where it is actually coming from:

- Lbs. of paper _____
- Lbs. of glass _____
- Plastic (recyclable) _____
- Plastic (non-recyclable) _____

Every week, tackle one type of waste and take action to reduce it.

STOP WASTE FROM ENTERING YOUR HOME

Reducing waste may require reducing purchases (see page 14), or making purchases with waste reduction in mind. Ask yourself

- Can I buy this without packaging?
 - Where can I buy without packaging? (A new local no-packaging grocery store is TARE)
 - What do I need to do or bring with me in order to buy without packaging?
- Can I leave the packaging at point of purchase? (One example of a local company that takes the packaging problem serious is Warner Stellian. They have a machine that recycles Styrofoam.)

WHAT TO DO WITH WASTE?

- Learn the ins and outs of your local recycling system
- Check out TerraCycle for all hard-to-recycle items (<https://www.terracycle.com/en-us>)

WHAT ARE YOU GOING TO DO NEXT?

CONSUMPTION

WHERE DO YOU BUY?

The products we buy have carbon footprints, too, not only in their manufacture but also their shipping. Before you buy something, ask:

- Can I find this product made locally or in the U.S.?
- Is this product sold in a local business that I can get to by walking, biking, busing?

WHAT DO YOU BUY?

- Can I make this product myself? (bonus points if you can make it from materials available locally)
- If this is a product I will have for a long time, is the quality good? Will it last? Is it repairable?
- Can I buy this product second-hand?

WHEN DO YOU BUY?

Several common lifestyle habits contribute to overbuying – shopping while bored, sad, lonely, shopping as a social activity, window shopping, online and TV shopping. Which ones are most problematic for you? If you want to tame your shopping habit, clip out this card and carry it with you in your wallet. Look at it while shopping.

Shopping Tips to Meet My Goals

1. Why am I here? What was I intending to do?
2. How do I feel, physically and emotionally?
3. Do I need this thing I am thinking of buying?
4. Can I wait on this purchase?
5. Can I afford this – not just in terms of money, but also time and care?

TRANSPORTATION

WHERE ARE YOU STARTING?

How many miles do you travel each week? _____

How many miles do you travel in a month? _____

WHAT MODE OF TRANSPORTATION DO YOU USE:

How do you get to:

- Work
- The grocery store
- Locations within 2 miles
- ... Within 5 miles
- ... Within 10 miles
- ... More than 10 miles
- Vacation
- Other places you go (make a list)

CAN YOU CHOOSE A LOWER-ENERGY OPTION FOR SOME OF THOSE TRIPS?

Could you make one of these choices instead?

- Carpool with someone going the same way
- Walk or bike
- Bus or light rail
- Amtrak, long-distance bus or interstate ridesharing service like ShareYourRide.net or RideBuzz.org

(Uber and Lyft are not lower-energy options, nor are they part of the “sharing economy.” They are an alternative taxi service.)

TRANSPORTATION

WHAT STANDS IN YOUR WAY OF MAKING A DIFFERENT CHOICE?

- Don't have access to other options
- Have to take other people with me
- Have to carry things with me
- Have multiple trips to make
- Time is a factor
- Health or fitness level won't allow me to walk or bike
- What else?

THINKING OF EACH TYPE OF TRIP SEPARATELY, WHAT COULD YOU DO TO OVERCOME THOSE BARRIERS?

DO YOU NEED TO BUY SOMETHING – OR SET UP A SHARING RELATIONSHIP – IN ORDER TO HAVE THE RESOURCE YOU NEED TO REACH YOUR GOAL?

- Sign up for carpooling with Metro Transit (<https://www.metrotransit.org/ridematch>) or your workplace
- Borrow a bike (Nice Ride - <https://secure.niceridemn.org/map/>)
- Get a bike (if you are low-income, check out Cycles for Change (Mpls or St. Paul) and learn about their build a bike program)
- Buy an electric bike to expand your range
- Buy or make a bike cart, bike basket or get a folding shopping cart to carry more
- Get a rechargeable bus card so you don't run out of money.
- Buy a hybrid or electric car

WHOLE HOUSES

INVEST IN ENERGY EFFICIENCY

Invest in an energy audit. CEE's Home Energy Squad offers an enhanced audit program and there are often special programs to bring the cost down: <http://homeenergysquad.net/services/services-centerpoint-customers>. They also offer loans for home and workplace energy improvements.

Finishing a basement or attic space, insulating, adding a kitchen vent, these changes can trap moisture, reduce air exchange, increase indoor air pollutants, and even cause dangerous backdrafting of carbon monoxide from natural gas furnaces and water heaters. Getting your home tested by a building performance professional before and after significant changes are made will ensure the efficiency improvements you make are not creating health and safety problems.

The proper order should include:

- Addressing radon and backdrafting of carbon monoxide
- Ensuring there is proper whole-home ventilation
- Address moisture problems, particularly in basements
- Air sealing
- Insulation

Windows are a later energy efficiency upgrade. When you do replace windows, look for windows that are "tuned" for the location they will be installed. (See <http://energetechs.com/windows-for-passive-solar-houses/>.) All windows are not the same. Some do a better job of keeping heat out, or keeping it in.

WHAT IS YOUR NEXT STEP?

HOUSE CLEANING & YARD CARE

SUMMER YARD CARE

Do you use any gas-powered appliances for yard maintenance – a lawn mower, a trimmer, leaf blower?

- Can you use an electric one rather than gas?
- Can you get by without?
- Can you use it less often?
- In the case of lawns, consider a plan for removing lawn that requires mowing and replacing it with slow-growing or no-mow ground cover, or adding plants and shrubs with mulch underneath.

WINTER YARD CARE

- If you use a snow blower, could you use an electric one (they are not quite as powerful)?
- Could you pool snow shoveling or snowblowing work with your neighbors for efficiency?

HOUSE CARE

- Are you using electric appliances when a non-electric – manual or chemical - one could do the same job?
- If you are using a dehumidifier, have you chosen an energy-efficient one? How often do you need to have it on during the day? Could you put it on a timer?
- Use non-petrochemical cleaning products to help encourage the growth of companies that are producing healthier products.

WHAT IS YOUR NEXT STEP?

TRANSPORTATION

DO YOU NEED TO MAKE A LIFESTYLE CHANGE?

- Move closer to work or school?
- Get more exercise to increase stamina
- Learn a new skill – how to ride the bus, how to maintain a bike?

CONSIDER CARBON OFFSETS

Until you do make a change, you could choose to invest in carbon offsets or invest in organizations working on renewable energy projects. Check out a few online carbon offset organizations:

- terrapass.com
- cooleffect.org
- carbonfund.org
- cotap.org

WHERE DO YOU WANT TO BE A YEAR FROM NOW?

WHAT ARE YOU GOING TO DO NEXT?

NATURAL GAS

YOUR HEATING BILLS (YOU CAN GET THIS FROM YOUR UTILITY COMPANY ONLINE).

- How much energy have you used this year? _____
- How much energy did you use last year? _____

Natural gas is cheap right now but there are two reasons why you might want to reduce your usage:

- 1) Much natural gas is obtained using fracking, a process that has been implicated in groundwater contamination, methane gas release and earthquakes,
- 2) Costs are expected to rise.

HOW MUCH GAS ARE YOU USING FOR SPACE HEATING VERSUS ALL OTHER USES?

- Amount Nov-Mar _____ (baseline plus heating)
- Amount Apr-Oct _____ (baseline)
- Subtract 2 from 1 _____ (this is approx. amount used for space heating)

LIST ALL OF THE APPLIANCES IN YOUR HOUSE THAT USE NATURAL GAS. HOW OLD ARE THEY?

- Natural gas water heater _____
- Natural gas furnace _____
- Natural gas dryer _____
- Natural gas stove _____
- Natural gas fireplace _____
- Other _____

FOOD & COOKING

YOUR DIET

Our food system is a major contributor of greenhouse gases and energy use. Preparation, storage and waste are important areas where we can have an impact.

Meat has a MUCH bigger energy footprint than vegetables and fruits.

- Take the Eat More Vegetables challenge: http://www.eatingwell.com/healthy_cooking/healthy_cooking_101_basics_and_techniques/take_our_eat_more_vegetables_challenge
- Go meatless one or more days a week

Minimize the distance your food travels:

- Start a garden in the yard or on the deck (vegetables, berries, fruit trees, chickens). Grow micro-greens or mushrooms indoors.
- Try the 10 day Eat Local Food challenge: <http://localfoodchallenge.org/>

Minimize or eliminate food waste, then go the extra step to help farmers minimize food waste by buying “ugly food.” (Look up stores like Imperfect Produce, Misfits Market, Hungry Harvest)

FOOD STORAGE AND PREPARATION

How much energy does it take to cook and store your food?

- Try eating a seasonal diet, like the 3 Season Diet Challenge (<http://lifespa.com/3seasondietchallenge/>) or the Seasonal Eating Challenge (<http://www.healthytippingpoint.com/2011/05/seasonal-eating-challenge-2.html>)
- Add raw-food meals into your weekly menu.
- Use non-electric means to prepare and store food: fermentation, and dehydration
- Learn how to solar cook or use a haybox cooker.

WHAT IS YOUR NEXT STEP?

APPLIANCES & ELECTRONICS

WHAT USES ELECTRICITY IN YOUR HOUSE?

1. Go room by room and take an inventory of everything that is plugged in. Ask yourself:
 - a. Do I need this?
 - b. Is there a non-electric option that does the same or a similar thing?
 - c. Is this item drawing energy even when it's not in use (if it has a black box on the cord, it does)?
 - d. Does this need to be plugged in all the time or can I leave it unplugged until I use it?
2. Identify appliances and electronics that are old and could be replaced with more energy efficient ones when they die.
3. Consider putting electronics on a power strip that can be turned off. If you think you won't do it, consider using a remote controlled powerstrip so you can turn it off from your bed or the sofa.
4. For appliances that rely on batteries, explore the use of a solar powered battery charger.

GIVE YOURSELF A CHALLENGE

1. Turn your electricity off once a month and see what it is like.
 - a. By practicing electricity-free living you will understand challenges you might face in case of a blackout. Do you have medical equipment that needs to be available at all times? Consider buying a generator.
2. Select days when you will turn off the TV and use non-electric entertainment.

WHAT ARE YOU GOING TO DO NEXT?

HEATING SPACE, FOOD & LAUNDRY (NATURAL GAS)

CAN YOU REPLACE THEM WITH A MORE ENERGY EFFICIENT MODEL OR NEWER TECHNOLOGY? MAKE A PLAN FOR WHEN.

- Natural gas water heater _____
- Natural gas furnace _____
- Natural gas dryer _____
- Natural gas stove _____
- Other _____

CAN YOU GET RID OF AN APPLIANCE ALTOGETHER OR USE A NO-ENERGY PRODUCT INSTEAD?

- If you can't do it all the time, can you do it some of the time?
- Are there any barriers that prevent you from choosing the no-fuel option?
- What would help you overcome that barrier?

WHAT ARE YOUR NEXT STEPS?

COOLING/REFRIGERATION

AIR CONDITIONING

- How old is your air conditioner?
- Do you have an air conditioner checkup every year or two to ensure it is working efficiently?

IF YOUR AIR CONDITIONING IS OLDER ...

- Have you looked at other technologies like a mini-split?
- Do you need whole house air conditioning or could you cool only one or a few rooms?

COULD YOU AVOID USING AIR CONDITIONING?

- Could you use fans?
- Could you set up a sleeping area in the basement?
- Do you have a sleeping porch?
- Can you plant large bushes or trees on the south and west side of your house to shade your house from sun?
- Can you add a film to your window to reflect sun?

REFRIGERATION

- Have you checked the gaskets on your refrigerator doors for leaks?
- Do you have a second, old refrigerator in the basement or garage you could live without? (Xcel offers rebates for people recycling an old working refrigerator or freezer. Visit the Xcel website.)

LIGHTING

LIGHT BULBS

1. Go room-to-room taking an inventory of lighting – look at light fixtures and the type of light bulbs needed in each one.
2. CFLs and LEDs use as much as 75% less energy than incandescents. If you have any incandescents still left in your house, now is the time to switch. If you are on a limited budget, switch out the most used lightbulbs first.
3. Visit the Xcel website to see where you can find deals on bulbs - https://www.xcelenergy.com/programs_and_rebates/residential_programs_and_rebates/lighting.
4. If you can't find the right bulb, visit a specialty store like Creative Lighting.
5. LEDs can last as much as 25% longer than halogens. If you have a halogen lamp, you may want to switch out your fixture for one that takes an LED or CFL light bulb. Do not simply switch out the bulb – halogen fixtures require halogen bulbs.
6. Be sure you've bought the right bulbs for your need, especially if you will be putting the bulb in an outdoor light, or an enclosed (recessed) light fixture.

HOW MUCH LIGHT DO YOU REALLY NEED?

Think of the purpose for which you need lighting in a particular place.

- Could you use task lighting only?
- Can you light only the room or part of the room you are using?

WHAT ARE YOU GOING TO DO NEXT?

MY ENERGY DESCENT PLAN

| Changes I am going to make | When | Then What | When |
|----------------------------|------|-----------|------|
| Transportation | | | |
| Natural Gas Usage | | | |
| Cooling & Refrigeration | | | |
| Lighting | | | |
| Food & Cooking | | | |
| House & Yard Care | | | |
| Whole House | | | |
| Consumption | | | |
| Waste | | | |

My Goals

Things I want to learn

Where I will find support