The following will help you to select a low-EMF furnace and some appliances:

Bill in Michigan:

I recommend the standard efficiency Bryant brand furnace and air conditioner. It has a two-speed fan, not a variable speed unit. It came with an Emerson thermostat.

Liz in AZ:

I also got a Bryant furnace. It is what my HVAC guy recommended. I was able to use any thermostat I wanted. Saved me $400 to use a simple manual thermostat rather than the one my HVAC guy wanted to put in.

Re washing machine-- as you know, avoid one with any wireless capability. Not sure about other features that would be better for someone highly ES.

Ray in WV:

The best furnace I've found is a Goodman, which is a single speed unit.

For a washing machine, it depends on how sensitive they are, but I would probably look at a basic unit without digital features.

Matthew in NYC:

I have one ES client that had to replace a washing machine. She uses a brand called Asko and she says she has absolutely no issues with it.

For AC units, you can specify when ordering the unit that you don't want the variable speed motor. I put in a system for a client with an outside air intake to pressurize the house to keep out wood smoke and other odors she gets from neighbors. She is both ES and CS. She has been good with the system and has had it for over a year and it runs continuously due to the outside air intake.

Eric in CA:

Avoid any ECM or Variable speed motor.

An ECM motor maintains a constant RPM or torque under various loads by varying the “Duty Cycle” of the motor by use of PWM, pulse width modulation of the current.

I just went thru the research to find a new central heat pump for my own house.

The State of CA mandates ECM & VS motors for almost all applications today.

I wonder if the increasing occurrence of senseless & illogical mass murders are related to Extreme Concern exposure to DE & RF which are the fastest growing EMF toxins.

GREEN by design

ALL YEAR SOLAR ○ HEATING ○ AIR

Efficiencies – Equipment – Warranties:

System	*3 1/2 Ton*	*4 Ton*
Brand	Goodman	Goodman
SEER	14.00	14.00
EER	11.50	11.50
HSPF	8.50	8.50
Furnace or A/H	ARUF49C14	ARUF49C14
Condensor	GSZ14042	GSZ14048
Conditioning Coil	5 kw heat strip	5 kw heat strip
Thermostat	Programmable	Programmable
Filter	Electrostatic	Electrostatic
ARI #	0	0
Parts	10 yr	10 yr
Labor	2 yr	2 yr
Thermostat	5 yr	5 yr
Compressor	10 yr	10 yr
Maintenance	1 yr	1 yr
Total Investment	**$13,417**	**$14,046**
Cash Discount	($402)	($410)
Net Price	$13,014	$13,624 Plus Electrical If Line Set is Large Enough

I don’t think we can upsize the Line Set due to location of unit. We just need to confirm size as well as the electrical.

William in AZ:

I recommend people get recycled appliances. I don't keep track of models but a good repair facility can give new life to old appliances. They may additionally be able to use / retrofit an old motor to newer appliances. You can always find someone.

Michael & Satya in CA:

We find that sensitive people's reactions are so individual and unique, and that the products themselves (even the same models) change so much and thus are somewhat unpredictable, that we stick with the usual: no wireless, lower power usage is often better, less computer things and less of all the various bells and whistles (simpler models are often better), keep a greater distance, shield the cord, things like that.

Keith in ID:

Appliances can be a real problem. I don't know of a safe brand, but I have a strategy that's been working -- choosing among the lowest price-point models. This is to say that within a brand's product line the lowest cost items don't tend to have the RF-emitting 'smart' issues. This worked for me last year with new GE range/oven, Maytag Dryer and Frigidaire Refrigerator. My reasoning was that there's more competition on the low-end products with less margin for extra features.

One further note: I owned a refrigerator like this one at my last home -- zero EMF and perfectly quiet. I chose the 'direct vent' option so the fresh air and products of combustion came from and returned to the outdoors.

https://uniqueappliances.com/product/off-grid-19-cu-ft-propane-refrigerator/

Michael in CA:

It is good that she does not do ECM, or anything with an inverter. I do not have specific recommendations.

Is the furnace a forced air unit, a water boiler, or a heat pump?

Mitch in Alberta:

I have stop giving advice for makes and models of appliances as they change so frequently. When it comes to EHS clients I am pretty cautious and I recommend the client to purchase from a store with good return policy (not always possible) and take some EMF measurements and see how they do as soon as it is installed.

For Furnaces:

- Fixed 2 or 3-speed motors will create less DE than VFD/PWM motors.
- Use a non-smart thermostat.
- a lot of furnaces have wifi capabilities or Bluetooth diagnostic signals (transmits 24/7) which is a separate module attached to the motherboard of the furnace. The power to these modules can be simply disconnected if you know what to look for.
- get a furnace through someone with a good return policy and test for EMFs when the furnace is installed.

For Washing Machines

- I'm not sure why, but some washing machines can produce DE - probably has to do with the motor used. Test after installation and makes there is a good return policy.
- There can be wifi and Bluetooth modules in these machines. It's becoming harder to find machines without wireless transmitters. Can unplug the power cable to wifi/Bluetooth module in these devices similar to furnaces.

Refrigerators

- make sure purchased with a good return policy and test right away after installation.
- I have had good success disabling wifi by unplugging the wifi module in fridges so this is not a deal breaker in my mind.

Cathy in ID:

This is an excellent question and a topic that comes up very often among my colleagues. Unfortunately, there is not a go-to list of products. The challenge that we face is that manufacturers are constantly changing their makes and models and so there seems to be little consistency among brands. I generally recommend the obvious for clients: avoiding all smart technology, getting the most 'dumbed-down' simple versions of appliances as possible, avoided SMPS and variable speeds. This is doable for the refrigerator and washing machine. Definitely suggest a top-loader instead of a front loader washing machine to avoid mold. Refrigerators can have elevated magnetic fields, and there doesn't seem to be a rhyme or reason on which ones produce them. She can put the fridge on an accessible power strip and turn it off whenever she is close by, then turn it back on when she leaves the space - this works well for my EHS clients.

The furnace is going to be the bigger the challenge. You can still buy single-speed furnaces:

https://www.amazon.com/Goodman-GMSS961205DN-1-Stage-Horizontal-Furnace/dp/B00OKT1OA2

I would obviously suggest she look into this option, but as you know, we can't guarantee that all components are going to 'not' cause issues. These big purchases are challenging to be sure because we just can't verify an individual's response. I would suggest buying one new appliance at a time, installing it and testing it over the course of a week or so to get a sense of any symptoms. Hooking up all three at once will cause quite the conundrum of what is doing what.

Shaun in Tennessee:

As long as it is but a 1 or 2 speed air handler it should be OK. I haven't and don't know of anyone else who has tested them for other forms of DE. Washers same thing. Getting harder to find them without the motor these days. Otherwise she would have to use a shielded isolation transformer and DNA line filter. Which gets very expensive!!

Dave in Michigan:

The furnace VFD blower motors are providing a challenge as you already know. I had a local Geothermal contractor replace my 30 yr old unit and he yanked the VFD flow controller for the fluid going into the closed loop system. He is supposed to come back and put in a non – VFD blower motor, but he has had some health issues that have limited his availability.

Because of the constant changing of specifications and features on new devices it is almost impossible to keep up on what is good and what is not. It is almost like our only alternative is to deal with the DE that is being produced after it is installed, and if we have any say, sleeving the electrical feeds in metal conduit or MC to cut down on radiated emissions when it is installed.

Rob in Toronto:

Yes, variable speed motors are a big issue. I am struggling to find appliances with single speed motors any more. Unfortunately, I don't know of any electrically sensitive compatible ones. DC based or RV appliances come to mind but that is an entirely different setup.

Shane in Oregon:

Agree on avoiding variable speed furnace. Other than obvious stuff like non-WiFi, I suppose she should purchase from a seller with a decent return policy.

Lee in Philadelphia:

Unfortunately, my best suggestion for a washer machine is an older, refurbished analog model - I preferred the Speed Queen. I recently had to replace mine and even those with analog dials, still had LED lights for each cycle and all appear to be extremely dirty. Looking at all the newer models seemed to be the same scenario. Washers and some dryers are so dirty, that I find the entire house can be affected by them, just plugged in and not even technically operating. Often, they must be unplugged when not in use as so many other dirty products these days. My new Speed Queen dryer is fortunately analog and not problematic. The electronic control newer Speed Queens are horrendous (no surprise).

Unfortunately, same appears to be true for most new furnaces - even those with a single speed or two speeds where one speed can be set, still have electronic starts, etc. I know because we had to replace ours about 5 yrs ago. Of course, for the furnace, there are other considerations - the electric circuit feeding the outside unit should run directly alongside the circuit feeding the air handler unit, even though this may require a longer cable run - using MC cable or conduit. From there, the circuit to the outside unit will run directly alongside the refrigerant lines. Keep the AC compressor and especially the disconnect switch away from bedroom walls or frequently used areas - I know you know this.

Thanks for the info regarding the fridge - yes they too have become challenging. I also needed one of those a few years back - Although not "clean", I got a basic Fisher-Paykel because there was minimal outgassing. I am a big proponent of chokes and use them on the back of the cord for the fridge and washer and most of my electronics!

Mieke in IL:

For washing machines, I think you can still get a super cheap one that doesn't have any electronics. Although when they are running, there are still the other EMFs coming out of it, so if someone lives in a small place, it could still affect them. I am in a small 1 BR 600 sq ft house so I only run the washer when I am out, even though it is super old, because the other types of fields extend out from it while it is running.

As for the HVAC systems, I don't know of any specifically that work for EHS clients. One issue that sometimes gets overlooked (besides avoiding variable speed motors) is that the HVAC company will oversize it (to make more money on the bigger system) and that was part of the reason that one woman ended up getting really EHS after upgrading to a new furnace. So that is something else for clients to stay on top of and watch out for the upsell no matter what, but unfortunately, I don't know of any specific HVAC systems that are OK for sensitive people.

John in Toronto:

Finding and purchasing new anything can be a challenge now as it seems manufacturers are cramming Wi-Fi and just about everything… We ended up going with Electrolux washer and dryer recently because they were some of the only ones that didn’t have Wi-Fi such as LG… But had other features we were looking for.

We also put in a new air conditioner some years ago and we’re lucky to find one of the last single-stage air handlers. I don’t know how available furnaces without variable speed motors are. I would think that something with predefined stages would be better than infinitely variable.

The client may also be able to put some filters on that same furnace circuit… Not sure how much you work with Andrew… He has a wiring diagram for placing outlets on 220 V circuits and how to apply filters most effectively.

Oram in CA:

Regarding DE from ECM motors in new energy-efficient furnaces, my partner was able to put a new, gas-fired 92% energy-efficient furnace into her house, where I live. I selected it for her because it has a single speed motor. We don't have air conditioning, so this is just for gas heating. Here is a list of such furnaces:

I have evaluated four single speed HVAC units that, as expected, did not raise the baseline dirty electricity levels as measured with my Stetzer Microsurge meter. I also list other PSC motors available on the market.

These furnaces have a permanent split capacitor, or single speed, "PSC" motor. They do not have a variable speed "ECM" motor:

This list includes the cooling capacity in tons, the manufacturer, and the model #:

3 and 5 ton Rheem Classic Series (cabinet; 95-96% efficient; "P" in model # means PSC motor)

http://www.rheem.com/product/gas-furnaces-classic-series-up-to-95-afue-psc-motor-multi-position

(For specs: http://cdn.globalimageserver.com/fetchdocument-rh.aspx?name=r95p-rfna-specification-sheets) (Model # R95PA1001521MSA; the "5" is 5 ton)

3 and 5 ton Ruud Achiever Plus Series (cabinet; 95-96% efficient; "P" in model # means PSC motor)

http://www.ruud.com/product/gas-furnaces-achiever-plus-series-up-to-96-afue-psc-motor-multi-position

(For specs: http://cdn.globalimageserver.com/fetchdocument-ru.aspx?name=r96p-ufpa-specification-sheets)

I personally measured the following models and found them to not produce levels of dirty electricity:

5 ton Rheem Model # RJNLA060JK000 (roof top model; "60" means 60,000 BTUH cooling capacity, or 5 ton)

(For specs: http://cdn.globalimageserver.com/fetchdocument-rh.aspx?name=rspm-2-5-ton-specification-sheets)

3 ton Rheem Model # RHSLHM3617JA (standard efficiency; cabinet; “S” in model number means “Standard Model, PSC Motor”; “36” means 36,000 BTU/H cooling capacity, or 3 ton)

http://www.rheem.com/product/air-handlers-standard-efficiency-psc-motor-standard-n-coil

(For specs: http://cdn.globalimageserver.com/fetchdocument-rh.aspx?name=rhsl-specification-sheets)

1.5 ton First Company Model # 19HX0CR410ATXV

? ton Goodman Model # ARUF42C14

There are probably other single speed PSC motor HVAC units on the market, and chances are they would also be clean of dirty electricity, but unless I can personally test them, I cannot vouch that they are actually clean of dirty electricity.

Also, electrically hyper-sensitive clients need to understand that we are doing our best to avoid dirty electricity in a new HVAC unit, but they may react even when our dirty electricity meters show that the levels of that particular type of EMF we are measuring is normal.

The only other thing I will say is that the single speed furnace we have in our house, a Ruud 95P Series model, is a bit on the loud side when it runs. It’s not the quietest model I’ve heard, but our unit is in a closet in the hallway outside the bedroom. If yours would be in the basement or attic, it shouldn’t be a problem. Make sure you hear one of these single speed units before you buy one. (We don’t have basements here in Southern California.)

Damon in Oklahoma:

As far as the furnace, I have had ok results with Bryant. Now, they can change components any time and what was ok with one manufacturing run can be different, so always best to test the DE onsite and some filtering can sometimes help too:
Furnace

- Use single speed motors best or multiple but not variable speed
- Multiple speed not too bad, way better than variable Example: Bryant Multi-speed Furnace

Air Conditioner

- Again, use single speed motors or multiple but not variable speed
- Carrier compressors seem pretty good

The washing machine and fridge is not something I have great recommendations on just yet. I would say avoid Samsung and other brands that use the smart app connect crap. I was able to unplug the Wi-Fi module from the motherboard on a Samsung fridge and at least that stopped the wi-fi and it worked fine, but it still contributed to DE in ways I wasn’t thrilled with.

Nate in Minneapolis:

While I can't give you a specific make and model to recommend about the furnace, I can say I would recommend a single speed or dual speed continuous motor. Avoid the variable speed motors which almost always create dirty electricity (DE) / EMI. Usually don't get the most "efficient" model you can buy and look at the more lower end ones as far as efficiency goes.

The cleanest furnace in the world won't do any good if it's not wired correctly! On my personal house I had a wiring error on the breaker that controls the AC outside, the neutral and ground were tied in there and that is a violation of the NEC. That causes current all over the AC lines, gas lines, ground system, etc. It's getting harder to get a furnace without a variable speed drive but I know they are still out there. Normally you need heavy duty filtration if you do get one with a variable speed (inline filtration). I'd advise clients if they buy an HVAC system with a variable speed to budget in filtration.

AC units lower the SEER rating the better in terms of DE, also in terms of repair, all the computer modules in them crap out eventually and it's an arm and leg to repair. This goes along with my comment in the first paragraph – "lower efficiency / less electronics ("simpler").

Fridges are a total wild west as far as recommendations, I don't recommend any specific brands because it's too complicated and there are so many. Just avoid the smart ones for sure...All fridges create a little DE in my experience testing them. I've found ones where the light bulb inside was a really dirty LED bulb that created a lot of DE too! The Greenwave or Stetzer filters usually do a good job at filtering the fridge DE as long as there are no wiring issues. Usually, the DE is pretty minor but I've seen ones that are bad. A client who you sent me in MN had a very high DE producing fridge. I don't know the "why" in that - was it failing? Was it poorly/cheaply manufactured? It raised the DE through the house when it was on though!

Washers just avoid the smart ones is my only advise there. "Simple as possible" usually a good recommendation. I've tested a very bad LG one but it was a very new one with every "bell and whistle" so to say.

Another comment:

Commercial Speed Queens. I'm hard on appliances and it's all mechanical. No electronics.