None of the original examples given here are horrible, and none of the rewrites are perfect. This is simply intended to give some specific instances of things to look out for when writing and editing.

Example 1:

"Currently, solar energy costs a staggering $5 per watt, in comparison to traditional energy sources, including natural gas, coal, and water, which cost just pennies per watt. And it is less efficient as well. If solar energy technology could be developed that was significantly less expensive but still comparatively efficient to current energy sources, our reliance on fossil fuels and other kinds of energy could be dramatically reduced." (68 words)

Rewritten: Traditional energy sources such as natural gas and coal can yield energy for just pennies per watt. In contrast, solar energy costs a staggering $5 per watt, and the process is less efficient as well. To reduce out reliance on fossil fuels, scientists must develop new solar cell technology that matches current energy sources in both cost and efficiency. (59 words)

Notes: reorganized at the beginning to smooth it out; took out hydroelectricity because it unnecessarily complicated things without much benefit for forward movement of the idea; changed the language at the end to make it a little more forceful

Example 2:

"Presently, solar energy is very expensive because of the type of manufacturing processes used to create solar cells; these processes require the same vacuum-controlled "clean" rooms and high-heat techniques as those used to develop computer microprocessor chips." (37 words)

Rewritten: Solar cell production requires the same vacuum-controlled "clean" rooms and high temperatures needed to make computer microprocessor chips, making the process and thus the end product very expensive. (28 words)

Notes: avoid constructions with excessive "of" (in almost all cases these can be rearranged to be made more clear and less awkward); also, in rewritten version, chose to use the cleaner, more direct "to make" instead of "for making"

Example 3:

"An additional challenge to the widespread adoption of solar energy is its inefficiency. Conventional photovoltaic cells can convert around 10% of absorbed light into electricity, but this is far below the energy conversion rates of other energy sources." (38 words)

Rewritten: Solar energy's inefficiency is an additional challenge to its widespread adoption. While fossil fuel power plants generally convert about 40% of the fuel's energy into electricity, photovoltaic cells can only convert about 10% of the absorbed light into electricity. (39 words)

Notes: the original version was using “an additional challenge” as a lazy transition (it works, but it’s passive and not very interesting); added specific number for comparison to the 10% to emphasize the inefficiency (phrases like “far below” are subjective and vague)

Example 4:

“Growing these nanocrystals requires manipulating two metals, cadmium and tellurium. From a heated solution, cadmium tellurium crystals are grown and then shaped into the desired forms. The resulting nanocrystals are the mineral component of the solar cells. The researchers started with nanorods, crystals grown in straight perpendicular units, but have recently started developing tetrapods because their highly stable, four-pronged shape assures contact with the electrode at any orientation.” (68 words)

Rewritten: The researchers use two metals, cadmium and tellurium, to make the solar cell nanocrystals. By heating the metals in various solvents, they can control how the crystals grow and what shape they take. At first the team grew they crystals as straight nanorods, but they have recently begun working with a four-pronged shape called a tetrapod. It is easier for nanocrystals of this shape, as opposed to linear nanorods, to make the necessary contacts with the electrode regardless of their orientation. (81 words)

Notes: got rid of passive voice, used more specific descriptive language

Example 5:

“Dioxins are infamous for being one of the modern age’s most potent cancer-causing chemicals. Evidence of their effects were first noted when Agent Orange, a mixture containing dioxins, was sprayed in the jungles of Vietnam causing hundreds of thousands of deaths. Dioxins are most commonly produced by the burning of chlorine-containing chemicals. Sources include coal fire plants, waste incinerators, and even forest fires. Until recently, ships and trains were a significant contributor to this problem, and the state of California Environmental Protection Agency (EPA) began a study to trace the source of the chlorinated chemicals in the vehicles’ fuel. The findings were quite surprising, as halogenated chemicals employed as engine and brake cleaners in the automotive repair industry were being combined with used car oil. This mixture would eventually find itself recycled into a cheap source of fuel for these huge, dioxin-spewing tankers and trains.

Regulations were then put in place to prohibit the use of chlorine-containing chemicals in degreasers, and the automotive repair industry soon adopted a mixture of the chemicals hexane and acetone as a substitute. Tragically, auto mechanics began experiencing symptoms ranging from numbness of the hands and feet to being rendered wheelchair-bound. It was eventually determined that this was caused by nerve damage due to hexane being metabolized into a potent neurotoxin in the mechanics’ bodies. This is just one example of many where chemicals regulation has solved one problem while creating a new one.”

Rewritten: From 1961 to 1971, over 20 million gallons of the powerful defoliant Agent Orange were sprayed across the jungles of South Vietnam. The herbicidal active ingredients destroyed

millions of acres of forests, but the contamination of Agent Orange with the carcinogen dioxin may be the most tragic element of the story, as it has caused hundreds of thousands of deaths and continues to affect the people of southern Vietnam to this day. Dioxin is now infamous as one of the world's most potent cancer-causing chemicals.

Dioxin is produced by burning chlorine-containing organic materials, a reaction that can take place in coal fire plants, waste incinerators, and even forest fires. Until recently, engine exhaust from ships and trains was also a major contributor to this problem, prompting the California Environmental Protection Agency to investigate how chlorinated chemicals could be contaminating these vehicles' fuel. It was found that the automotive repair industry was using the chemicals methylene chloride and tetrachloroethylene as brake and engine cleaners, where they combined with used car oil into a mixture that eventually was recycled into a cheap source of fuel for dioxin-spewing tankers and trains.

These findings prompted well-intentioned regulations to prohibit the use of chlorinated chemicals as degreasers in California, and the automotive repair industry adopted a mixture of the chemicals hexane and acetone as a substitute. Tragically, auto mechanics began experiencing numbness of the hands and feet, and some were even rendered wheelchair-bound. It was eventually determined that these symptoms were caused by nerve damage due to hexane, which the body metabolizes into a potent neurotoxin.

Notes: this is the opening of an article, so I made the intro more of a hook ("show, don't tell"), spelled out the story a little more clearly, showing the explicit connections from one step to the next